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                   USPAT2
 NEWS  9  JAN 13   IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
 NEWS 10  JAN 13   New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
                   INPADOC
 NEWS 11  JAN 17   Pre-1988 INPI data added to MARPAT
 NEWS 12  JAN 17   IPC 8 in the WPI family of databases including WPIFV
 NEWS 13  JAN 30   Saved answer limit increased
 NEWS 14  JAN 31   Monthly current-awareness alert (SDI) frequency
                   added to TULSA

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=> s (methine or polymethine or oxanol or merocyanine)
L1 13460 (METHINE OR POLYMETHINE OR OXANOL OR MEROCYANINE)

=> s (methine or polymethine or oxanol or merocyanine or cyanine)
L2 25982 (METHINE OR POLYMETHINE OR OXANOL OR MEROCYANINE OR CYANINE)

=> s ((two or multi or bi)(5a)photon?) or biphoton? or multiphoton?
L3 72028 ((TWO OR MULTI OR BI)(5A) PHOTON?) OR BIPHOTON? OR MULTIPHOTON?

=> s l2 and l3
L4 104 L2 AND L3

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5 92 DUP REM L4 (12 DUPLICATES REMOVED)

=> d all 1-92

L5 ANSWER 1 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:24797 CAPLUS
ED Entered STN: 11 Jan 2006
TI Patterned Colloid Assembly by Grafted Photochromic Polymer Layers
AU Piech, Martin; George, Matthew C.; Bell, Nelson S.; Braun, Paul V.
CS Sandia National Laboratories, Albuquerque, NM, 87185, USA
SO Langmuir (2006), 22(4), 1379-1382
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English
CC 36 (Physical Properties of Synthetic High Polymers)
AB Quartz surfaces and colloidal silica particles were derivatized with a poly(Me methacrylate) copolymer contg. spirobenzopyran (SP) photochromic mols. in the pendant groups at a concn. of 20 mol %. ***Two*** - ***photon*** near-IR excitation (.apprx.780 nm) was then used to create chem. distinct patterns on the modified surfaces through a photochromic process of SP transformation to the zwitterionic ***merocyanine*** (MC) isomer. The derivatized colloids were approx. 10 times more likely to adsorb onto the photoswitched, MC regions. Surface coverage and adsorption kinetics have been compared to the mean-field model of irreversible monolayer adsorption.
RE.CNT 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 2 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:110162 CAPLUS
ED Entered STN: 06 Feb 2006
TI ***Two*** - ***photon*** anisotropy: Analytical description and molecular modeling for symmetrical and asymmetrical organic dyes
AU Fu, Jie; Przhonska, Olga V.; Padilha, Lazaro A.; Hagan, David J.; Van Stryland, Eric W.; Belfield, Kevin D.; Bondar, Mikhail V.; Slominsky, Yuriy L.; Kachkovski, Alexei D.
CS College of Optics and Photonics: CREOL & FPCE, University of Central Florida, 4000 Central Florida Boulevard, Orlando, FL, 32816, USA
SO Chemical Physics (2006), 321(3), 257-268
CODEN: CMPHC2; ISSN: 0301-0104
PB Elsevier B.V.
DT Journal
LA English
CC 73 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB One- and ***two*** - ***photon*** anisotropy spectra of a series of sym. and asym. ***polymethine*** (PD) and fluorene mols. were measured exptl. and discussed theor. within the framework of three-state and four-state models. For all the mols. discussed in this paper, the exptl. ***two*** - ***photon*** anisotropy values, r 2PA, lie in the relatively narrow range from 0.47 to 0.57 and remain almost independent of wavelength over at least two electronic transitions. This is in contrast with their one-photon anisotropy, which shows strong wavelength dependence, typically varying from .apprxeq.0 to 0.38 over the same transitions. A detailed anal. of the ***two*** - ***photon*** absorption (2PA) processes allows us to conclude that a three-state model can explain the 2PA anisotropy spectra of most asym. PDs and fluorenes. However, this model is inadequate for all the sym. mols. Exptl. values of r 2PA for sym. ***polymethines*** and fluorenes can be explained by symmetry breaking leading to the deviation of the orientation of the participating transition dipole moments from their "classical" orientations.

L5 ANSWER 3 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2006:15507 CAPLUS
ED Entered STN: 06 Jan 2006
TI ***Two*** - ***photon*** absorption of a supramolecular pseudoisocyanine J-aggregate assembly
AU Belfield, Kevin D.; Bondar, Mykhailo V.; Hernandez, Florencio E.; Przhonska, Olga V.; Yao, Sheng
CS Department of Chemistry and College of Optics and Photonics: CREOL and FPCE, University of Central Florida, Orlando, FL, 32816-2366, USA
SO Chemical Physics (2006), 320(2-3), 118-124
CODEN: CMPHC2; ISSN: 0301-0104
PB Elsevier B.V.
DT Journal
LA English
CC 73 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB Linear spectral properties, including excitation anisotropy, of pseudoisocyanine or 1,1'-diethyl-2,2'- ***cyanine*** iodide (PIC) J-aggregates in aq. solns. with J-band position at 573 nm were investigated. ***Two*** - ***photon*** absorption of PIC J-aggregates and monomer mols. was studied using an open aperture Z-scan technique. A strong enhancement of the ***two*** - ***photon*** absorption cross-section of PIC in the supramol. J-aggregate assembly was obsd. in aq. soln. This enhancement is attributed to a strong coupling of the mol. transition dipoles. No ***two*** - ***photon*** absorption

at the peak of the J-band was detected.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L5 ANSWER 4 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:1220210 CAPLUS

DN 143:469676

ED Entered STN: 18 Nov 2005

TI ***Two*** - ***photon*** absorption dye-containing polymer compositions and method for color development for optical memory devices

IN Akiba, Masaharu; Morinaga, Naoki; Takizawa, Hiroo

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 64 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08L101-00
ICS C08K005-17; C08K005-3417; G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005320502	A2	20051117	JP 2004-295862	20041008
JP 2004-115167	A	20040409		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005320502	ICM	C08L101-00
	ICS	C08K005-17; C08K005-3417; G11B007-24
	IPCI	C08L0101-00 [ICM,7]; C08K0005-17 [ICS,7]; C08K0005-3417 [ICS,7]; G11B0007-24 [ICS,7]
	FTERM	4J002/AA001; 4J002/BG061; 4J002/EN076; 4J002/EN086; 4J002/EU186; 4J002/EU217; 4J002/FD096; 4J002/FD207; 4J002/GS00; 5D029/JA04

AB The compns. contain ***two*** - ***photon*** absorption dyes (e.g., ***cyanine*** dye) and leuco dyes dispersed in polymers, and optionally polymerizable compds. The process consists of nonresonance ***two*** - ***photon*** excitation of the ***two*** - ***photon*** dyes for oxidative color development of the leuco dyes. Change of refractive

index, degree of absorption, or luminescence intensity is induced by the color development in the optical memory devices. The optical memory devices may be capable of increasing difference of light absorption between recorded parts and unrecorded parts by further light irradn. The optical memory devices show good recording stability and fast readout speed.

ST optical memory device polymer leuco dye ***cyanine*** ; ***two*** ***photon*** absorption ***cyanine*** dye optical memory

IT Azo dyes
Cyanine dyes
Leuco dyes
Optical memory devices
(***two*** - ***photon*** absorption dye-contg. polymer compns. for optical memory devices)

IT 603-48-5 37060-36-9 869380-68-7
RL: TEM (Technical or engineered material use); USES (Uses)
(leuco dye; ***two*** - ***photon*** absorption dye-contg. polymer compns. for optical memory devices)

IT 9011-14-7, Polymethyl methacrylate
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer matrix; ***two*** - ***photon*** absorption dye-contg. polymer compns. for optical memory devices)

IT 6099-48-5 869380-65-4
RL: TEM (Technical or engineered material use); USES (Uses)
(***two*** - ***photon*** absorption dye; ***two*** - ***photon*** absorption dye-contg. polymer compns. for optical memory devices)

L5 ANSWER 5 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:632427 CAPLUS
DN 143:162740
ED Entered STN: 21 Jul 2005
TI High-efficiency nonresonant ***two*** - ***photon*** -absorbing organic materials and their applications
IN Akiba, Masaharu; Tani, Takeharu; Morinaga, Naoki; Takizawa, Hiroo
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 69 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G02F001-361
ICS C08K005-00; C08L101-00; C09K011-06; G11B007-24; C09B023-00
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 27, 38, 74

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005195922	A2	20050721	JP 2004-2743	20040108

PRAI JP 2004-2743 20040108

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005195922	ICM	G02F001-361
	ICS	C08K005-00; C08L101-00; C09K011-06; G11B007-24; C09B023-00
	IPCI	G02F0001-361 [ICM,7]; C08K0005-00 [ICS,7]; C08L0101-00 [ICS,7]; C09K0011-06 [ICS,7]; G11B0007-24 [ICS,7]; C09B0023-00 [ICS,7]
	FTERM	2K002/AB12; 2K002/BA01; 2K002/CA05; 2K002/HA13; 4H056/CA02; 4H056/CA04; 4H056/CA05; 4H056/CB01; 4H056/CB06; 4H056/CC02; 4H056/CC08; 4H056/CD05; 4H056/CD08; 4H056/CE02; 4H056/CE03; 4H056/CE06; 4H056/CE07; 4H056/DD03; 4H056/DD07; 4H056/DD19; 4H056/DD22; 4H056/DD29; 4H056/FA06; 4H056/FA10; 4J002/BC031; 4J002/BC091; 4J002/BG011; 4J002/BG041; 4J002/BG051; 4J002/BG061; 4J002/BG071; 4J002/BG131; 4J002/BH021; 4J002/ET006; 4J002/EU116; 4J002/EU226; 4J002/EV326; 4J002/FD096; 5D029/JA04

AB The materials contain TPAD1L(TPAD2)n (I; TPAD1, TPAD2 = group contg. nonresonant ***two*** - ***photon*** -absorbing chromophore; L = linkage, single bond, atom; n = 1-7). Preferably, the TPAD1 and TPAD2 are

cyanine dyes, streptocyanine dyes, ***merocyanine*** dyes, oxonol dyes, stilbazolium dye, or groups contg. X2(CR4:CR3)mC:Y(CR1:CR2)nX1 [R1-R4 = H, substituent: Y = O, at. group contg. CN, COMe, SO2, etc.; X1, X2 = aryl, heterocyclyl, 5- or 6-membered azacyclic group (structure given); m, n = 0-4; m = n .noteq. 0;]. The materials are useful for luminescent materials, polymerizable compns., optical recording materials, and image forming materials, which are irradiated with laser at wavelength longer than linear absorption band of I in actual use.

ST nonresonant ***two*** ***photon*** absorbing org material luminescence; optical recording nonresonant ***two*** ***photon*** absorbing org material; polymn nonresonant ***two*** ***photon*** absorbing org material; laser imaging nonresonant ***two*** ***photon*** absorbing org material

IT Luminescent substances
Nonlinear optical materials
Optical recording materials
Two - ***photon*** absorption
(high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

IT Luminescence
(laser-induced; high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

IT Imaging
Optical recording
(laser; high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

IT Polymerization
(radiochem., laser-induced; high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

IT 718636-51-2P 859500-47-3P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

IT 859500-49-5P 859500-50-8P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

IT 120-92-3D, Cyclopentanone, cyclopentanone 123-31-9, Hydroquinone, reactions 694-83-7, 1,2-Cyclohexanediamine 681836-46-4 859500-48-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

IT 859500-51-9 859500-52-0
RL: TEM (Technical or engineered material use); USES (Uses)
(high-efficiency nonresonant ***two*** - ***photon*** -absorbing org. materials for luminescent materials, polymerizable compns., optical recording materials, and image forming materials)

L5 ANSWER 6 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:546075 CAPLUS
DN 143:68430
ED Entered STN: 24 Jun 2005
TI Nonresonant ***two*** - ***photon*** absorbing materials, optical recording media therewith, and writing/reading method thereof
IN Akiba, Masaharu; Takizawa, Hiroo; Tani, Takeharu
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 47 pp.
CODEN: JKXXAF
DT Patent
LA Japanese

IC ICM G03C001-72
ICS B41M005-26; C09B023-00; G02B027-22; G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 41
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005164817	A2	20050623	JP 2003-401479	20031201
PRAI JP 2003-401479		20031201		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005164817	ICM	G03C001-72
	ICS	B41M005-26; C09B023-00; G02B027-22; G11B007-24
	IPCI	G03C0001-72 [ICM,7]; B41M0005-26 [ICS,7]; C09B0023-00 [ICS,7]; G02B0027-22 [ICS,7]; G11B0007-24 [ICS,7]
	FTERM	2H111/EA03; 2H111/EA32; 2H111/FA01; 2H111/FB42; 2H111/FB43; 2H111/FB45; 2H123/AA00; 2H123/AA60; 2H123/AE00; 2H123/AE01; 2H123/CA00; 2H123/CA22; 2H123/FA00; 4H056/CA01; 4H056/CC02; 4H056/CC08; 4H056/CE03; 4H056/CE06; 4H056/DD03; 4H056/DD07; 4H056/DD19; 4H056/DD23; 4H056/DD29; 5D029/JA04; 5D029/JB11; 5D029/JB16; 5D029/JC03

OS MARPAT 143:68430
AB Materials contg. compds. (e.g., dyes) satisfying nonresonant ***two*** - ***photon*** absorption cross section .gtoreq.3000 (or .gtoreq.10,000) GM in the blue side of (Lw + 200) nm (Lw = linear absorption max.) are claimed. Optical memory media (e.g., WORM disks) employing the materials and showing change in n, absorbance, and/or luminance characteristics are further claimed. Also claimed are polymerizable compns. contg. the materials and their induced polymn., and 3D displays contg. the materials and their induced switching. The polymn. and display switching are carried out by irradn. of laser beams of wavelength in red side of linear absorption bands or wavelength giving molar absorption coeff. .ltoreq.10.
ST nonresonant ***two*** ***photon*** absorption dye optical recording; absorption cross section large optical disk
IT Azo dyes
Cyanine dyes
Laser radiation
Optical recording
Optical recording materials
(nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)
IT ***Two*** - ***photon*** absorption
(nonresonant; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)
IT Polymerization
(photopolymn.; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)
IT Optical imaging devices
(three-dimensional; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)
IT 58109-40-3, Diphenyliodonium hexafluorophosphate
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(acid generators; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)
IT 133795-09-2
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(base generators; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)
IT 9011-14-7, Poly(methyl methacrylate)
RL: TEM (Technical or engineered material use); USES (Uses)

(binders; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)

IT 574-93-6D, Phthalocyanine, derivs.
RL: TEM (Technical or engineered material use); USES (Uses)
(dyes; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)

IT 1552-42-7 854737-33-0 854737-34-1
RL: TEM (Technical or engineered material use); USES (Uses)
(leuco dyes; nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)

IT 111545-69-8 364729-85-1, DeSolite SCR 701 831218-03-2
RL: TEM (Technical or engineered material use); USES (Uses)
(nonresonant ***two*** - ***photon*** absorbing dyes with large absorption cross-sections in blue regions for recording materials and displays)

L5 ANSWER 7 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:323314 CAPLUS
DN 142:400655
ED Entered STN: 15 Apr 2005
TI Method and material for recording volume phase-type hologram
IN Takizawa, Hiroo
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 50 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03H001-04
ICS G03F007-004; G03H001-02; G11B007-0065
CC 74-8 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005099416	A2	20050414	JP 2003-332938	20030925
PRAI JP 2003-332938		20030925		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005099416	ICM	G03H001-04
	ICS	G03F007-004; G03H001-02; G11B007-0065
	IPCI	G03H0001-04 [ICM,7]; G03F0007-004 [ICS,7]; G03H0001-02 [ICS,7]; G11B0007-0065 [ICS,7]
	FTERM	2H025/AA00; 2H025/AB14; 2H025/AC08; 2H025/AD01; 2H025/BH05; 2H025/CA00; 2H025/CC15; 2K008/AA04; 2K008/BB05; 2K008/DD13; 2K008/EE07; 2K008/FF17; 2K008/HH01; 2K008/HH06; 2K008/HH13; 2K008/HH18; 5D090/BB16

OS MARPAT 142:400655
AB Disclosed is a process for forming a hologram using ***two*** - ***photon*** absorption. A 2-photon absorption compd. may include a (mero) ***cyanine*** dye, an oxonol dye, a phthalocyanine dye, an azo dye, and a dye represented by X2(R4C=CR3)mCO(R1C=CR2)nX1 (R1-4 = H, substituent; n, m = 0-4; and X1,2 = aryl, heterocyclyl, etc.).
ST recording vol phase hologram holog; ***merocyanine*** ***cyanine*** oxonol phthalocyanin azo dye
IT Azo dyes
Cyanine dyes
Holography
Two - ***photon*** absorption
(***two*** - ***photon*** absorption material for vol. phase-type holog. recording)
IT 78902-42-8 111545-69-8 114750-15-1 217793-15-2 308116-42-9
500905-67-9 680232-68-2 680232-71-7 680232-73-9 680232-75-1
680232-77-3 680232-79-5 681836-47-5 718636-63-6 816453-41-5
835628-33-6 835628-34-7 849792-43-4 849792-45-6
RL: EPR (Engineering process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)

(***two*** - ***photon*** absorption material for vol. phase-type holog. recording)

L5 ANSWER 8 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:302558 CAPLUS
DN 142:382269
ED Entered STN: 08 Apr 2005
TI ***Two*** - ***photon*** absorption optical recording material and ***two*** - ***photon*** absorption optical recording method
IN Takizawa, Hiroo
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 84 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03C001-72
ICS G02F001-13; G02F001-35; G02F001-361; G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41, 73
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005092074	A2	20050407	JP 2003-328273	20030919

PRAI JP 2003-328273 20030919

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005092074	ICM	G03C001-72
	ICS	G02F001-13; G02F001-35; G02F001-361; G11B007-24
	IPCI	G03C0001-72 [ICM,7]; G02F0001-13 [ICS,7]; G02F0001-35 [ICS,7]; G02F0001-361 [ICS,7]; G11B0007-24 [ICS,7]
	FTERM	2H088/EA62; 2H088/GA06; 2H088/GA12; 2H088/GA15; 2H088/JA26; 2H088/MA20; 2H123/AA00; 2H123/AA02; 2H123/AA03; 2H123/AA04; 2H123/AA05; 2H123/AA08; 2H123/AA09; 2H123/AA12; 2H123/AA19; 2H123/AA51; 2H123/AA60; 2H123/AE00; 2H123/AE01; 2K002/AA05; 2K002/AB29; 2K002/BA02; 2K002/CA06; 2K002/CA14; 2K002/HA22; 5D029/JA04

OS MARPAT 142:382269
AB Disclosed is a process of altering an orientation of a compd. with a characteristic birefringence using 2-photon absorption and chem. fixing the orientation, thereby recording information as a refractive index modulation in a nonrewritable manner. A 2-photon absorption compd. may be a ***cyanine*** dye ***merocyanine*** dye, an oxonol dye, a phthalocyanine dye, or a compd. represented by X2-(R4C=CR3)mCO(R1C=CR2)nX1 (R1-4 = H, substituent; m, n = 0-4; and X1,2 = aryl, heterocyclyl, etc.).
ST ***two*** ***photon*** absorption optical recording; ***cyanine*** ***merocyanine*** oxonol dye phthalocyanine
IT Optical recording materials
(nonrewritable; prepn. of ***two*** - ***photon*** absorption compd. for optical recording material)
IT ***Cyanine*** dyes
Optical recording
Two - ***photon*** absorption
(prepn. of ***two*** - ***photon*** absorption compd. for optical recording material)
IT 574-93-6D, Phthalocyanine, deriv.
RL: DEV (Device component use); USES (Uses)
(prepn. of ***two*** - ***photon*** absorption compd. for optical recording material)
IT 681836-47-5P 718636-60-3P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of ***two*** - ***photon*** absorption compd. for optical recording material)
IT 120-92-3, Cyclopentanone 927-63-9 4637-24-5 88253-66-1 165547-54-6 398522-14-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of ***two*** - ***photon*** absorption compd. for optical recording material)
IT 88340-89-0P 681836-46-4P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of ***two*** - ***photon*** absorption compd. for optical recording material)

L5 ANSWER 9 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:118427 CAPLUS
DN 142:207706
ED Entered STN: 10 Feb 2005
TI ***Two*** - ***photon*** -absorption foaming materials and three-dimensional photorefractive or optical recording media therewith
IN Takizawa, Hiroo
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 56 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G03C001-54
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005037658	A2	20050210	JP 2003-274096	20030714
PRAI JP 2003-274096		20030714		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005037658	ICM	G03C001-54
	ICS	G11B007-24
	IPCI	G03C0001-54 [ICM,7]; G11B0007-24 [ICS,7]
	FTERM	2H123/AD24; 2H123/AD30; 2H123/FA00; 2H123/FA18; 5D029/JA04; 5D029/JB11

AB Materials including ***two*** - ***photon*** -absorbing compds. (e.g., ***methine*** dyes, phthalocyanine dyes) and thereby leading gas-bubble formation are claimed. The gas bubbles may be of 50 nm-5 .mu.m dimension. The materials may further contain blowing agents. Photorefractive recording materials contg. the above, exhibiting extremely high spatial resoln., are also claimed.
ST foaming material ***two*** ***photon*** absorption photorefractive recording; spatial resoln ***two*** ***photon*** absorption dye recording; ***methine*** phthalocyanine ***two*** ***photon*** absorbing dye optical recording
IT ***Two*** - ***photon*** absorption
(nonresonant; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)
IT Optical recording materials
(photorefractive; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)
IT ***Cyanine*** dyes
(***two*** - ***photon*** -absorbing; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)
IT Blowing agents
Photorefractive materials
(***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)
IT 779-19-1
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(blowing agents; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)
IT 9011-53-4P, Butyl methacrylate-isobutyl methacrylate copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(cellular; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)

IT 574-93-6D, Phthalocyanine, derivs.
RL: TEM (Technical or engineered material use); USES (Uses)
(dyes, ***two*** - ***photon*** -absorbing; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)

IT 75-28-5, Isobutane 124-38-9, Carbon dioxide, formation (nonpreparative) 7446-09-5, Sulfur dioxide, formation (nonpreparative) 7446-11-9, Sulfur trioxide, formation (nonpreparative) 7727-37-9, Nitrogen, formation (nonpreparative) 7782-44-7, Oxygen, formation (nonpreparative) 10102-44-0, Nitrogen dioxide, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(emission gases; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)

IT 54443-93-5P 66142-15-2P 88253-66-1P 88340-89-0P 681836-46-4P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediates; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)

IT 33628-03-4 78902-42-8 681836-47-5 718636-60-3 774216-84-1
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(***two*** - ***photon*** -absorbing dyes; ***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)

IT 77-32-7 115-80-0, Triethyl orthopropionate 120-92-3, Cyclopentanone 769-42-6, N,N-Dimethylbarbituric acid 927-63-9 1120-71-4, Propane sultone 4485-89-6 4637-24-5 5608-83-3 61931-68-8 165547-54-6 398522-14-0 839708-66-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)

IT 767248-59-9
RL: TEM (Technical or engineered material use); USES (Uses)
(***two*** - ***photon*** -absorption foaming materials for 3D photorefractive recording media with high spatial resoln.)

L5 ANSWER 10 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1051114 CAPLUS
DN 144:8084
ED Entered STN: 02 Oct 2005
TI Solvent effects on the ***two*** - ***photon*** absorption of distyrylbenzene chromophores
AU Woo, Han Young; Liu, Bin; Kohler, Bernhard; Korystov, Dmitry; Mikhailovsky, Alexander; Bazan, Guillermo C.
CS Mitsubishi Chemical Center for Advanced Materials, Department of Materials, Institute for Polymers and Organic Solids, University of California, Santa Barbara, CA, 93106, USA
SO Journal of the American Chemical Society (2005), 127(42), 14721-14729
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 25, 73
AB A series of org.- and water-sol. distyrylbenzene-based ***two*** - ***photon*** absorption (TPA) fluorophores contg. dialkylamino donor groups at the termini was designed, synthesized, and characterized. The central core was systematically substituted to modulate intramol. charge transfer (ICT). These mols. allow an examn. of solvent effects on the TPA cross section (.delta.) and on the TPA action cross section. In toluene, the .delta. values follow the order of ICT strength. The effect of solvent on .delta. is nonmonotonic: max. .delta. was measured in an intermediate polarity solvent (THF) and was lowest in water. We failed to find a correlation between the obsd. solvent effect and previous theor. predictions. Hydrogen bonding to the donor groups and aggregation of the optical units in water, which are not included in calculational anal., may be responsible for the discrepancies between exptl. results and theory.
ST solvent effect ***two*** ***photon*** absorption prepd distyrylbenzene dye

IT ***Cyanine*** dyes
(cationic; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT UV and visible spectra
(in solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT Fluorescence
Solvatochromism
(in ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT Electron transfer
(intramol., photochem.; in ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT Cyclic voltammetry
Oxidation potential
Two - ***photon*** absorption
(of prepd. distyrylbenzene chromophores)
IT ***Cyanine*** dyes
Solvent polarity effect
(solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 120654-38-8P 766545-67-9P 766545-68-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 869877-99-6P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(orange dye intermediate; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 577773-62-7P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(orange dye; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 869877-98-5P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(red dye intermediate; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 869878-01-3P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(red dye; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 62-53-3, Aniline, reactions 68-12-2, DMF, reactions 75-50-3, Trimethylamine, reactions 2009-83-8, 6-Chloro-1-hexanol 4546-04-7 7681-82-5, Sodium iodide, reactions 10025-87-3, Phosphorus oxychloride 60491-94-3 288627-04-3 314270-67-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 766545-69-1P 869877-97-4P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(yellow dye intermediate; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
IT 577773-61-6P 869878-00-2P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellow dye; solvent effects on ***two*** - ***photon*** absorption of prepd. distyrylbenzene chromophores)
RE.CNT 107 THERE ARE 107 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 11 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1062319 CAPLUS
DN 144:23966
ED Entered STN: 05 Oct 2005
TI New fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections
AU Suo, Zhiyong; Drobizhev, Mikhail; Spangler, Charles W.; Christensson, Niklas; Rebane, Alexander
CS Physics Department and Chemistry and Biochemistry Department, Montana State University, Bozeman, MT, 59717, USA
SO Organic Letters (2005), 7(22), 4807-4810
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 25, 28, 73
OS CASREACT 144:23966
AB A new fluorophore, tris(9,9-diethyl-9H-fluorenyl)amine, was synthesized by the Buchwald-Hartwig reaction of 2-aminofluorene, and based on this mol. three more fluorophores were prepd. that exhibit a very large intrinsic three-photon absorption in the near-IR region, which scales as a third power of the bridge length.
ST three photon near IR absorbing fluorescent dye prepn
IT Fluorescent dyes
(***cyanine*** ; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT ***Cyanine*** dyes
(fluorescent; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT ***Cyanine*** dyes
(near-IR-absorbing; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT Fluorescence
(of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT ***Multiphoton*** absorption
(three-photon; of fluorophores based on trifluorenylamine with very

large intrinsic three-photon absorption cross sections)
IT 870283-40-2P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorophore; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT 870283-32-2P 870283-33-3P 870283-35-5P 870283-37-7P 870283-38-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT 870283-42-4P 870283-43-5P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(orange fluorophore; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT 74-96-4, Bromoethane 107-21-1, Ethylene glycol, reactions 6344-66-7, 3-Aminofluorene 144981-87-3 145005-98-7 225113-39-3 287493-15-6, 2-Bromo-9,9-diethyl-9H-fluorene 870283-39-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
IT 870283-41-3P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellow fluorophore; prepn. of fluorophores based on trifluorenylamine with very large intrinsic three-photon absorption cross sections)
RE.CNT 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 12 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:890185 CAPLUS
DN 143:474390
ED Entered STN: 25 Aug 2005
TI Imaging of Caenorhabditis elegans samples and sub-cellular localization of new generation photosensitizers for photodynamic therapy, using non-linear

microscopy
AU Filippidis, G.; Kouloumentas, C.; Kapsokalyvas, D.; Voglis, G.; Tavernarakis, N.; Papazoglou, T. G.
CS Institute of Electronic Structure and Laser, Foundation of Research and Technology-Hellas, Heraklion, 71110, Greece
SO Journal of Physics D: Applied Physics (2005), 38(15), 2625-2632
CODEN: JPAPBE; ISSN: 0022-3727
PB Institute of Physics Publishing
DT Journal
LA English
CC 9-5 (Biochemical Methods)
AB ***Two*** - ***photon*** excitation fluorescence (TPEF) and second-harmonic generation (SHG) are relatively new promising tools for the imaging and mapping of biol. structures and processes at the microscopic level. The combination of the 2 image-contrast modes in a single instrument can provide unique and complementary information concerning the structure and the function of tissues and individual cells. The extended application of this novel, innovative technique by the biol. community is limited due to the high price of com. ***multiphoton*** microscopes. In this study, a compact, inexpensive and reliable setup utilizing femtosecond pulses for excitation was developed for the TPEF and SHG imaging of biol. samples. Specific cell types of the nematode Caenorhabditis elegans were imaged. Detection of the endogenous structural proteins of the worm, which are responsible for observation of SHG signals, was achieved. Addnl., the binding of different photosensitizers in the HL-60 cell line was investigated, using non-linear microscopy. The sub-cellular localization of photosensitizers of a new generation, very promising for photodynamic therapy (PDT), (Hypericum perforatum L. exts.) was achieved. The sub-cellular localization of these novel photosensitizers was linked with their photodynamic action during PDT, and the possible mechanisms for cell killing were elucidated.
ST excitation fluorescence microscopy Caenorhabditis HL60 cell photosensitizer photodynamic therapy
IT Fluorescence excitation
(2-photon; imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)
IT Animal cell line
(HL-60; imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)
IT Hypericum perforatum
(ext.; imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)
IT Proteins
RL: ANT (Analyte); ANST (Analytical study)
(green fluorescent; imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)
IT Caenorhabditis elegans
Human
Imaging
Muscle
Pharynx
Photodynamic therapy
Photosensitizers, pharmaceutical
Second-harmonic generation
(imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)
IT Actomyosins
Collagens, analysis
RL: ANT (Analyte); ANST (Analytical study)
(imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)
IT Microscopy
(non-linear; imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)
IT 548-04-9, Hypericin 62796-23-0, ***Merocyanine*** 540

RL: ANT (Analyte); ANST (Analytical study)
(imaging of Caenorhabditis elegans samples and sub-cellular localization of photosensitizers for photodynamic therapy using non-linear microscopy)

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L5 ANSWER 13 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2005:3687 CAPLUS
DN 142:242203
ED Entered STN: 04 Jan 2005

TI Water-soluble [2.2]paracyclophane chromophores with large ***two*** - ***photon*** action cross sections

AU Woo, Han Young; Hong, Janice W.; Liu, Bin; Mikhailovsky, Alexander; Korystov, Dmitry; Bazan, Guillermo C.

CS Mitsubishi Chemical Center for Advanced Materials, Department of Materials, Institute for Polymers and Organic Solids, University of California, Santa Barbara, CA, 93106, USA

SO Journal of the American Chemical Society (2005), 127(3), 820-821
CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 25, 27, 73

OS CASREACT 142:242203

AB A series of .alpha.,.omega.-donor-substituted distyrylbenzene dimers held together by the [2.2]paracyclophane core was designed, synthesized, and characterized. Different substituents were chosen to modulate the strength of the donor nitrogen groups and to allow the mols. to be either neutral and sol. in nonpolar org. solvents or charged and water-sol. The specific neutral structures are (in order of decreasing donor strength) 4,7,12,15-tetra[N,N-bis(6''-chlorohexyl)-4'-aminostyryl]-[2.2]paracyclophane (1N), 4,7,12,15-tetra[(N-(6''-chlorohexyl)carbazol-3'-yl)vinyl]-[2.2]paracyclophane (2N), and 4,7,12,15-tetra[N,N-bis(4''-(6'''-chlorohexyl)phenyl)-4'-aminostyryl]-[2.2]paracyclophane (3N). The charged

species are 4,7,12,15-tetra[N,N-bis(6''-(N,N,N-trimethylammonium)hexyl)-4'-aminostyryl]-[2.2]paracyclophane octaiodide (1C), 4,7,12,15-tetra[(N-(6''-(N,N,N-trimethylammonium)hexyl)carbazol-3'-yl)vinyl]-[2.2]paracyclophane octaiodide (2C), and 4,7,12,15-tetra[N,N-bis(4''-(6'''-(N,N,N-trimethylammonium)hexyl)phenyl)-4'-aminostyryl]-[2.2]paracyclophane octaiodide (3C). ***Two*** - ***photon*** excitation spectra, measured using the ***two*** - ***photon*** induced fluorescence technique, show in toluene the following trend for the ***two*** - ***photon*** cross sections (.delta.): 3N > 2N > 1N. In water the .delta. values follow the same order, 3C .apprxeq. 2C > 1C, but are smaller (approx. one-third). Significantly, the fluorescence quantum yield (.eta.) in water decreases much more for 1, relative to 2 and 3. The ***two*** - ***photon*** action cross sections (.delta..eta.) of 2C and 3C are 294 GM and 359 GM, resp. These values are among the highest reported thus far. These results show that, to maximize the .delta..eta. in this class of chromophores, one needs to fine-tune the magnitude of the charge transfer character of the excited state, to minimize fluorescence quenching in polar media.

ST paracyclophane prepn ***two*** ***photon*** fluorescence water soly

IT Fluorescent dyes
(***cyanine*** ; prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT ***Cyanine*** dyes
(fluorescent; prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT Electron transfer
(in water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT Absorption spectra
(of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT Cyclophanes
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(paracyclophanes; prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT Fluorescent indicators
(prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections for)

IT Laser induced fluorescence
(***two*** - ***photon*** ; prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT 845640-46-2P 845640-47-3P 845640-48-4P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT 845640-49-5P 845640-50-8P 845640-51-9P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT 62-53-3, Aniline, reactions 68-12-2, DMF, reactions 86-74-8, Carbazole 629-03-8, 1,6-Dibromohexane 2009-83-8, 6-Chloro-1-hexanol 81090-53-1, 4,4'-Dibromotriphenylamine 433719-59-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

IT 94847-10-6P, N-(6-Bromohexyl)carbazole 120654-38-8P 766545-67-9P 845640-43-9P 845640-44-0P 845640-45-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of water-sol. paracyclophane chromophores with large ***two*** - ***photon*** action cross sections)

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L5 ANSWER 14 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:168012 CAPLUS
DN 142:392712
ED Entered STN: 28 Feb 2005
TI Structures and nonlinear optical properties of new symmetrical ***two*** - ***photon*** photopolymerization initiators
AU Yan, Yun-Xing; Tao, Xu-Tang; Sun, Yuan-Hong; Wang, Chuan-Kui; Xu, Gui-Bao; Yu, Wen-Tao; Zhao, Hua-Ping; Yang, Jia-Xiang; Yu, Xiao-Qiang; Wu, Yong-Zhong; Zhao, Xian; Jiang, Min-Hua
CS State Key Laboratory of Crystal Materials, Shandong University, Jinan, 250100, Peop. Rep. China
SO New Journal of Chemistry (2005), 29(3), 479-484
CODEN: NJCHE5; ISSN: 1144-0546
PB Royal Society of Chemistry
DT Journal
LA English
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 25, 27, 37, 73, 75
AB Four new sym., ***two*** - ***photon*** photopolymn. initiators, 9-(4-{(1E,11E)-4-[(E)-4-(9H-carbazol-9-yl)styryl]-2,5-dimethoxystyryl}phenyl)-9H-carbazole, N-(4-{(1E,8E)-4-[(E)-4-(diphenylamino)styryl]-2,5-dimethoxystyryl}phenyl)-N-phenylbenzeneamine, 1,4-bis{2-[4-(2-pyridin-4-ylvinyl)phenyl]vinyl}-2,5-bisdimethoxybenzene, and 1,4-bis{2-[4-(2-pyridin-4-ylvinyl)phenyl]vinyl}-2,5-bisdodecyloxybenzene, have been synthesized and characterized. One-photon fluorescence, one-photon fluorescence quantum yields, one- ***photon*** fluorescence lifetimes, and ***two*** - ***photon*** fluorescence have been investigated. The results show that they are all good ***two*** - ***photon*** absorbing chromophores and effective ***two*** - ***photon*** photopolymn. initiators. The ***two*** - ***photon*** absorption cross-sections of these mols. have been evaluated by theor. calcns. Microfabrication via ***two*** - ***photon*** -initiated polymn. has been studied and a possible photopolymn. mechanism is discussed.
ST sym ***cyanine*** prepn ***two*** ***photon*** fluorescence; photopolymn catalyst prepn ***two*** ***photon*** fluorescence
IT Density functional theory
(B3LYP; in structure of sym. ***two*** - ***photon*** photopolymn. initiators)
IT Bond angle
(carbon-carbon-carbon; in sym. ***two*** - ***photon*** photopolymn. initiators)
IT Bond length
(carbon-carbon; in sym. ***two*** - ***photon*** photopolymn. initiators)
IT Bond length
(carbon-nitrogen; in sym. ***two*** - ***photon*** photopolymn. initiators)

IT Bond length
(carbon-oxygen; in sym. ***two*** - ***photon*** photopolymn. initiators)
IT Bond angle
(dihedral; in sym. ***two*** - ***photon*** photopolymn. initiators)
IT Bond angle
(in sym. ***two*** - ***photon*** photopolymn. initiators)
IT Fusion enthalpy
(of sym. ***two*** - ***photon*** photopolymn. initiator)
IT Crystal structure
Solvatochromism
(of sym. ***two*** - ***photon*** photopolymn. initiators)
IT Polymerization catalysts
(photopolymn.; prepn., structure and nonlinear optical properties of sym. ***two*** - ***photon*** photopolymn. initiators)
IT Fluorescence
UV and visible spectra
(prepn., structure and nonlinear optical properties of sym. ***two*** - ***photon*** photopolymn. initiators)
IT Laser induced fluorescence
(***two*** - ***photon*** ; prepn., structure and nonlinear optical properties of sym. ***two*** - ***photon*** photopolymn. initiators)
IT 214773-67-8P 320575-33-5P 850130-08-4P 850130-09-5P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(initiator; prepn., structure and nonlinear optical properties of sym. ***two*** - ***photon*** photopolymn. initiators)
IT 100-43-6, 4-Vinylpyridine 1122-91-4, 4-Bromobenzaldehyde 4181-05-9, 4-(Diphenylamino)benzaldehyde 10273-64-0 110677-45-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn., structure and nonlinear optical properties of sym. ***two*** - ***photon*** photopolymn. initiators)
IT 539826-11-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(sym. ***two*** - ***photon*** photopolymn. initiators for prepn. of)
RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 15 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 1
AN 2005:319693 CAPLUS
DN 143:468368
ED Entered STN: 14 Apr 2005
TI Up-converted luminescence of ***cyanine*** dye J-aggregates
AU Miyasue, K.; Honma, T.; Kurita, S.; Sekiya, T.; Nakajima, M.; Suemoto, T.
CS Department of Physics, Faculty of Engineering, Yokohama National University, Hodogaya, Yokohama, 240-8501, Japan
SO Journal of Luminescence (2005), 112(1-4), 416-419
CODEN: JLUMA8; ISSN: 0022-2313
PB Elsevier B.V.
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB A J-band photoluminescence of ***cyanine*** dye J-aggregates was obsd. under excitation below the band gap. This emission is not due to ***two*** - ***photon*** absorption. The luminescence intensity becomes weaker with a decrease in temp. For the excitation below the band gap, the rise and decay times of the J-band luminescence from ***cyanine*** dye concn. of 4.times.10-4 M are 9.0 and 155 ps, resp. In case of the band-to-band excitation, the radiative decay starts just after excitation and fast and slow decay components have time consts. of 13 and 54 ps, resp. The lifetime of luminescence depends on the concn. of the ***cyanine*** dye.
ST ***cyanine*** dye J aggregate up converted luminescence
IT ***Cyanine*** dyes
Films
J-aggregates
Luminescence
Photoexcitation
UV and visible spectra
(up-converted luminescence of ***cyanine*** dye J-aggregates)
IT 28272-54-0
RL: PRP (Properties)
(up-converted luminescence of ***cyanine*** dye J-aggregates)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 16 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:184478 CAPLUS
DN 142:411709
ED Entered STN: 04 Mar 2005
TI Synthesis, structures, and properties of ***two*** new ***two*** - ***photon*** photopolymerization initiators
AU Yan, Yun-Xing; Tao, Xu-Tang; Sun, Yuan-Hong; Yu, Wen-Tao; Xu, Gui-Bao; Wang, Chuan-Kui; Zhao, Hua-Ping; Yang, Jia-Xiang; Yu, Xiao-Qiang; Zhao, Xian; Jiang, Min-Hua
CS State Key Laboratory of Crystal Materials, Shandong University, Jinan, 250100, Peop. Rep. China
SO Bulletin of the Chemical Society of Japan (2005), 78(2), 300-306
CODEN: BCSJA8; ISSN: 0009-2673
PB Chemical Society of Japan
DT Journal
LA English
CC 35-3 (Chemistry of Synthetic High Polymers)
Section cross-reference(s): 27, 37, 73, 75

OS CASREACT 142:411709

AB ***Two*** new ***two*** - ***photon*** photopolymn. initiators, diphenyl-(4-{2-[4-(2-pyridin-4-ylvinyl)phenyl]vinyl}phenyl)amine (I) and 9-(4-{2-[4-(2-pyridin-4-ylvinyl)phenyl]vinyl}phenyl)-9H-carbazole (II), have been synthesized and their crystal structures have been detd. One-photon fluorescence, one-photon fluorescence quantum yields, one-***photon*** fluorescence lifetimes, and ***two*** - ***photon*** fluorescence have been investigated. The results show that I and II are good ***two*** - ***photon*** -absorbing chromophores and effective ***two*** - ***photon*** photopolymn. initiators. The calcd. ***two*** - ***photon*** absorption cross sections of I and II for the lowest excited state are 59.3 .times. 10-50 and 43.0 .times. 10-50 cm4 s photon-1, resp. ***Two*** - ***photon*** -initiating polymn. microfabrication expts. have been studied and possible photopolymn. mechanisms have been discussed.

ST ***two*** ***photon*** fluorescence photopolymn ***cyanine*** catalyst prepn

IT Density functional theory
(B3LYP; in structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT Bond angle
(carbon-carbon-carbon; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT Bond length
(carbon-carbon; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT Bond length
(carbon-nitrogen; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT Bond angle
(dihedral; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT Polymerization catalysts
(photopolymn.; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT Bond angle
Crystal structure
Fluorescence
Solvatochromism
Two - ***photon*** absorption
UV and visible spectra
(prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT Laser induced fluorescence
(***two*** - ***photon*** ; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT 763141-76-0P 850135-18-1P
RL: CAT (Catalyst use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(initiator; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT 219987-44-7P 637012-13-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

IT 539826-11-4P, Bisphenol A-epichlorohydrin copolymer dimethacrylate homopolymer
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators for polymn. of)

IT 100-43-6, 4-Vinylpyridine 4181-05-9, 4-(Diphenylamino)benzaldehyde 51044-13-4, 4-Bromobenzyltriphenylphosphonium bromide 110677-45-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn., structure and properties of ***two*** - ***photon*** photopolymn. initiators)

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L5 ANSWER 17 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:1085901 CAPLUS
ED Entered STN: 10 Oct 2005
TI New tool to monitor membrane potential by FRET voltage sensitive dye (FRET-VSD) using spectral and fluorescence lifetime imaging microscopy
AU Dumas, D.; Stoltz, J.-F.
CS Laboratoire de Mecanique et Ingenierie Cellulaire et Tissulaire, UMR CNRS 7563 LEMTA et IFR 111 CNRS -UHP-INPL-CHU, Vandoeuvre le's Nancy, 54505, Fr.
SO Clinical Hemorheology and Microcirculation (2005), 33(3), 293-302
CODEN: CHMIFQ; ISSN: 1386-0291
PB IOS Press
DT Journal
LA English
CC 9 (Biochemical Methods)
AB In this work, we investigated a voltage-sensitive fluorescent system to monitor membrane potential by spectral and lifetime fluorescence microscopy. A two-component FRET sensor has been designed that utilizes fluorescent phospholipids acceptor (DHPE-TRITC) bound on one side of the membrane and donor mols. (oxonol) which are sensitive to membrane potential. We used ***multiphoton*** excitation and FLIM to deliver contrast lifetimes of different line cancerous cells. These results provide new information concerning the differential response to depolarized cancerous cells from resting cells when compared to fibroblast normal cells. Given the sensitivity and the fast time response, this FRET system may be particularly useful for applications involving compression of tissues by mech. forces.
ST cell membrane elec potential fluorescent dye spectroscopy FLIM
IT INDEXING IN PROGRESS
IT Electric potential
(biol., action; new tool for membrane potential monitoring by FRET voltage sensitive dye using spectral and fluorescence lifetime imaging microscopy)
IT Imaging agents
(contrast; new tool for membrane potential monitoring by FRET voltage sensitive dye using spectral and fluorescence lifetime imaging microscopy)
IT Microscopy
(fluorescence lifetime imaging; new tool for membrane potential monitoring by FRET voltage sensitive dye using spectral and fluorescence lifetime imaging microscopy)
IT Imaging
(fluorescent; new tool for membrane potential monitoring by FRET voltage sensitive dye using spectral and fluorescence lifetime imaging microscopy)
IT Biosensors
Cell membrane
Cyanine dyes
Diagnosis

Fluorescence resonance energy transfer
Fluorescent dyes
Spectroscopy
(new tool for membrane potential monitoring by FRET voltage sensitive dye using spectral and fluorescence lifetime imaging microscopy)
IT Phospholipids
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(new tool for membrane potential monitoring by FRET voltage sensitive dye using spectral and fluorescence lifetime imaging microscopy)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 18 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:375519 CAPLUS
DN 143:340110
ED Entered STN: 02 May 2005
TI ***Two*** - ***photon*** excitation induced fluorescence of a trifluorophore-labeled DNA
AU Jockusch, Steffen; Li, Zengmin; Ju, Jingyue; Turro, Nicholas J.
CS Department of Chemistry, Columbia University, New York, NY, USA
SO Photochemistry and Photobiology (2005), 81(Mar./Apr.), 238-241
CODEN: PHCBAP; ISSN: 0031-8655
PB American Society for Photobiology
DT Journal
LA English
CC 3-1 (Biochemical Genetics)
AB ***Two*** - ***photon*** excitation of a trifluorophore (6-carboxyfluorescein, N,N,N',N'-tetramethyl-6-carboxyrhodamine and ***cyanine*** -5 monofunctional dye) labeled DNA, which has a scaffold of 26 nucleotides, was achieved using focused laser light of a Q-switched Nd-YAG laser (1064 nm). The obsd. fluorescence signature (emission ratio from the three fluorophores) of the labeled DNA after ***two*** - ***photon*** excitation is very different from the fluorescence signatures produced by one-photon excitation at different wavelength. The addnl. fluorescence signatures produced by ***two*** - ***photon*** excitation of the fluorescent oligonucleotides will facilitate their use as combinatorial fluorescence energy transfer tags for multiplex genetic anal.
ST ***two*** ***photon*** excitation fluorescence trifluorophore labeled oligonucleotide DNA
IT Lasers
(Q-switched Nd-YAG; ***two*** - ***photon*** excitation induced fluorescence of a trifluorophore-labeled DNA)
IT Laser induced fluorescence
(excitation; ***two*** - ***photon*** excitation induced fluorescence of a trifluorophore-labeled DNA)
IT Oligodeoxyribonucleotides
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(labeled; ***two*** - ***photon*** excitation induced fluorescence of a trifluorophore-labeled DNA)
IT Fluorescence excitation
(laser induced; ***two*** - ***photon*** excitation induced fluorescence of a trifluorophore-labeled DNA)
IT Fluorescent indicators
(***two*** - ***photon*** excitation induced fluorescence of a trifluorophore-labeled DNA)

IT Laser induced fluorescence
(***two*** - ***photon*** ; ***two*** - ***photon***
excitation induced fluorescence of a trifluorophore-labeled DNA)
IT 7440-00-8, Neodymium, uses 12005-21-9, YAG
RL: DEV (Device component use); USES (Uses)
(laser; ***two*** - ***photon*** excitation induced fluorescence
of a trifluorophore-labeled DNA)
IT 865725-72-0
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL
(Biological study)
(trifluorophore-labeled 26-mer; ***two*** - ***photon***
excitation induced fluorescence of a trifluorophore-labeled DNA)
IT 3301-79-9D, 6-Carboxyfluorescein, conjugate with oligonucleotide
91809-67-5D, conjugate with oligonucleotide 146368-14-1D, Cy-5,
conjugate with oligonucleotide
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL
(Biological study)
(***two*** - ***photon*** excitation induced fluorescence of a
trifluorophore-labeled DNA)
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L5 ANSWER 19 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:331878 CAPLUS
DN 140:317663
ED Entered STN: 23 Apr 2004
TI Techniques for identifying molecular structures and treating cell types
lining a body lumen using fluorescence

IN Madar, Igal; Murphy, John C.
PA The Johns Hopkins University, USA

SO PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM A01N
CC 9-5 (Biochemical Methods)
Section cross-reference(s): 14

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004032621	A2	20040422	WO 2003-US24163	20030801
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	CA 2494231	AA	20040422	CA 2003-2494231	20030801
	US 2004092825	A1	20040513	US 2003-633446	20030801
PRAI	US 2002-400325P	P	20020801		

WO 2003-US24163 W 20030801

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004032621	ICM	A01N
	IPCI	A01N [ICM,7]
	IPCR	A61K0049-00 [I,A]; A61K0049-00 [I,C]
	ECLA	A61K049/00P4; A61K049/00P12
CA 2494231	IPCI	A61B0005-00 [ICM,7]; A61K0041-00 [ICS,7]
US 2004092825	IPCI	A61B0006-00 [ICM,7]
	IPCR	A61K0049-00 [I,A]; A61K0049-00 [I,C]
	NCL	600/473.000
	ECLA	A61K049/00P4; A61K049/00P12

AB Techniques for detecting fluorescence emitted by mol. constituents in a wall of a body lumen include introducing an autonomous solid support into the body lumen. Cells in a lumen wall of the body lumen are illuminated by a light source mounted to the solid support with a wavelength that excites a particular fluorescent signal. A detector mounted to the solid support detects whether illuminated cells emit the particular fluorescent signal. If the particular fluorescent signal is detected from the illuminated cells, then intensity or position in the lumen wall of the detected fluorescent signal, or both, is detd. These techniques allow the information collected by the capsule to support diagnosis and therapy of GI cancer and other intestinal pathologies and syndromes. For example, these techniques allow diagnostic imaging using endogenous and exogenous fluoroprobes, treating diseased sites by targeted release of drug with or without photoactivation, and detg. therapeutic efficacy.

ST mol structure body lumen fluorescence imaging

IT Annexins
RL: BSU (Biological study, unclassified); DGN (Diagnostic use); BIOL (Biological study); USES (Uses)
(V; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Diagnosis
(agents; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Intestine, neoplasm
(colon; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Fluorescent dyes
(dinitrophenyl contg.; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Imaging
(fluorescent; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Proteins
RL: BSU (Biological study, unclassified); DGN (Diagnostic use); BIOL (Biological study); USES (Uses)
(green fluorescent; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Porphyrins
RL: BSU (Biological study, unclassified); DGN (Diagnostic use); BIOL (Biological study); USES (Uses)
(hemato-; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Proteins
RL: BSU (Biological study, unclassified); DGN (Diagnostic use); BIOL (Biological study); USES (Uses)
(red fluorescent; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Fluorescent dyes
(sulforhodamine; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Algorithm
Cell
Computer program
Cyanine dyes
Fluorometry
(techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Phosphonium compounds
RL: BSU (Biological study, unclassified); DGN (Diagnostic use); BIOL

(Biological study); USES (Uses)
(techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Fluorescent substances
(***two*** - ***photon*** , C625; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT Proteins
RL: BSU (Biological study, unclassified); DGN (Diagnostic use); BIOL (Biological study); USES (Uses)
(yellow fluorescent; techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

IT 106-60-5, 5-Aminolevulinic acid 154-17-6, 2-Deoxyglucose 477-73-6, Safranin O 2321-07-5 3520-43-2, JC-1 7187-55-5, 3,3'-Diethylthiadicarbocyanine 14459-29-1, Hematoporphyrin 62669-70-9, Rhodamine 123 68335-15-9, Photofrin 116294-02-1, TMRE 122341-38-2 150206-05-6, 5-Carboxyfluorescein diacetate 150347-59-4
RL: BSU (Biological study, unclassified); DGN (Diagnostic use); BIOL (Biological study); USES (Uses)
(techniques for identifying mol. structures and treating cell types lining body lumen using fluorescence)

L5 ANSWER 20 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:252741 CAPLUS
DN 140:283896
ED Entered STN: 26 Mar 2004
TI Optical biosensors and methods of use thereof
IN Waggoner, Alan S.; Armitage, Bruce A.; Brown, William E.
PA Carnegie Mellon University, USA
SO PCT Int. Appl., 104 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G01N
CC 9-1 (Biochemical Methods)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004025268	A2	20040325	WO 2003-US29289	20030915
	WO 2004025268	A3	20041125		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2006019408	A1	20060126	US 2005-77999	20050311
PRAI	US 2002-410834P	P	20020913		
	WO 2003-US29289	A1	20030915		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004025268	ICM	G01N
	IPCI	G01N [ICM,7]
	IPCR	G01N0033-543 [I,A]; G01N0033-543 [I,C]
	ECLA	G01N033/543K
US 2006019408	IPCI	G01N0033-543 [I,A]
	NCL	436/518.000

OS MARPAT 140:283896
AB A fundamental biosensor for detection of biol. or environmental analytes is provided. The biosensor comprises a selectivity component for recognition of a target mol. and a reporter mol. that is sensitive to changes in the microenvironment. Methods of using the biosensor are also provided, including in vivo and in vitro applications using biosensor mols. that optionally may be attached to a surface.
ST optical biosensor target recognition reporter microenvironment; biol environmental analysis optical biosensor
IT Escherichia coli

(0157:H7, as biol. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Hemagglutinins
Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(A, as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Disease, animal
(Ciguatera, as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(Coprius artemetaris as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(G, as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Proteins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(MBP (maltose-binding protein), as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Signal peptides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(NLS (nuclear localization signal), as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Polysulfones, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(alkylene derivs., as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Polycyclic compounds
RL: ANT (Analyte); ANST (Analytical study)
(arom. hydrocarbons, as hazardous substance, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Cleaning solvents
Dermatophagoides
Mold (fungus)
Odor and Odorous substances
Pollen
Refrigerants
Solvents
(as air pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Tobacco smoke
(as air pollutant; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Asbestos
Heavy metals
Volatile organic compounds
RL: ANT (Analyte); ANST (Analytical study)
(as air pollutant; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Alphavirus

Arenavirus
Brucella
Burkholderia mallei
Burkholderia pseudomallei
Chlamydophila psittaci
Coxiella burnetii
Eastern equine encephalitis virus
Ebola virus
Filovirus
Francisella tularensis
Hantavirus
Lassa virus
Machupo virus
Marburg virus
Nipah virus
Rickettsia prowazeki
Variola major virus
Venezuelan equine encephalitis virus
Western equine encephalitis virus
Yersinia pestis
(as biol. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Signal peptides
Thioredoxins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Chemical warfare agents
(as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Cannabinoids
RL: ANT (Analyte); ANST (Analytical study)
(as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Adenoviridae
Amanita
Astrovirus
Bacillus anthracis
Bacillus cereus
Brucella melitensis
Calicivirus
Campylobacter jejuni
Clostridium botulinum
Clostridium perfringens
Cryptosporidium parvum
Cyclospora cayetanensis
Entamoeba histolytica
Giardia lamblia
Hepatitis A virus
Listeria monocytogenes
Norwalk-like virus
Parvovirus
Rotavirus
Salmonella
Shigella
Staphylococcus aureus
Toxoplasma gondii
Trichinella spiralis
Vibrio cholerae
Vibrio parahaemolyticus
Vibrio vulnificus
Yersinia enterocolitica
Yersinia pseudotuberculosis
(as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Nitrites
RL: ANT (Analyte); ANST (Analytical study)
(as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Parasite
(as food contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Dyes
(as reporter mols.; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Chemiluminescent substances
Fluorescent substances
(as reporter; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Fluoropolymers, analysis
RL: ANT (Analyte); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as substrate and as detectable chem. warfare agent; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Drug delivery systems
Films
Plates
(as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Alloys, uses
Fluoropolymers, uses
Polycarbonates, uses
Polyimides, uses
Zeolites (synthetic), uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Aptamers
(as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Aeromonas
Coliform bacteria
Coliphage
Cryptosporidium
Enterococcus
Escherichia coli
Giardia
Pathogen
(as water pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Spheres
(beads, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Analysis
(biochem.; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Polymers, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(block, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Disinfectants
(byproducts, as water pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes

in microenvironment)
IT Peptides, biological studies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(calmodulin-binding, as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(camelized, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Air pollution
(carbon dioxide, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Functional groups
(chem. handle, for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Biological materials
(contaminants, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Glass, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(controlled pore, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Skin
(dander, as air pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Air pollution
Biological warfare agents
Cell
Drugs
Environmental pollution
Eubacteria
Fungi
Health hazard
Microorganism
Pesticides
Soil pollution
Virus
Water pollution
(detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(diabodies, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Apparatus
(diagnostic instruments, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Solid wastes
(dredging, as water pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Escherichia coli
(enterohemorrhagic, as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)
IT Escherichia coli

(enterotoxigenic, as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(enterotoxin B, Staphylococcal, as biol. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(epsilon, from Clostridium perfringen, sas biol. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Air pollution
(exhaust, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Biosensors
(fiber-optic, reporter detectable by; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Cytometry
(flow, reporter detectable by; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Microscopes
(fluorescence, epifluorescence, reporter detectable by; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(fragments, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Virus
(hemorrhagic fever virus, as biol. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(humanized, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Prosthetic materials and Prosthetics
(implants, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Medical goods
(instruments, surgical, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Polyesters, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(lactide, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Medical goods
(medical devices, as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Sensors
(microarray readers, reporter detectable by; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Disease, plant
(mildew, as air pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified);

DEV (Device component use); TEM (Technical or engineered material use);
ANST (Analytical study); BIOL (Biological study); USES (Uses)
(monoclonal, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT ***Cyanine*** dyes
(monomethine or trimethine, as restriction sensor dye reporter mol.; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Transcription factors
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(myc, as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Ricins
RL: ANT (Analyte); ANST (Analytical study)
(of Ricinus communis, as biol. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Environmental analysis
Glass substrates
Immobilization, molecular or cellular
(optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Amino acids, analysis
Carbohydrates, analysis
Cytokines
Hormones, animal, analysis
Nucleic acids
Peptides, analysis
Proteins
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Biosensors
(optical; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Phosphates, analysis
RL: ANT (Analyte); ANST (Analytical study)
(organophosphates, as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Air pollution
(particulate, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Azines
RL: ANT (Analyte); ANST (Analytical study)
(phenothiazines, as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Aromatic hydrocarbons, analysis
RL: ANT (Analyte); ANST (Analytical study)
(polycyclic, as hazardous substance, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Transcytosis
(protein contg. domain for, as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Confocal laser scanning microscopy
Fluorometers
(reporter detectable by; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Molecular dynamics
Polarity
pH
(reporter dye sensitive to; optical biosensors having target

recognition component and reporter sensitive to changes in microenvironment)

IT Scomberoides
(scombroid fish poisoning; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Environmental pollution
(sediment, as water pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Toxins
RL: ANT (Analyte); ANST (Analytical study)
(shellfish, as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(single chain, Fv, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Inorganic compounds
Organic compounds, analysis
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(small; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Materials
(template imprinted, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(tetrabodies, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Shellfish
(toxins, as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Antibodies and Immunoglobulins
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(tribodies, as target recognition component; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Microscopes
(***two*** ***photon*** excitation, reporter detectable by; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT Peptides, biological studies
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(type III secretion system-targeting, as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 6581-06-2, BZ
RL: ANT (Analyte); ANST (Analytical study)
(Agent BZ, as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 532-27-4, Chloroacetophenone
RL: ANT (Analyte); ANST (Analytical study)
(Agent CNC, Agent CNB, as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 675600-78-9, Chloropicrin-phenacyl chloride mixt.

RL: ANT (Analyte); ANST (Analytical study)
(CNS, as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 50-00-0, Formaldehyde, analysis 124-38-9, Carbon dioxide, analysis 630-08-0, Carbon monoxide, analysis 7446-09-5, Sulfur dioxide, analysis 10028-15-6, Ozone, analysis 10043-92-2, Radon, analysis 10102-44-0, Nitrogen dioxide, analysis 11104-93-1, Nitrogen oxide, analysis 12624-32-7, Sulfur oxide
RL: ANT (Analyte); ANST (Analytical study)
(as air pollutant; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 505-60-2, Mustard 107231-12-9, Botulin
RL: ANT (Analyte); ANST (Analytical study)
(as biol. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 24937-47-1, Poly arginine 25212-18-4, Poly arginine 26062-48-6, Poly L-Histidine 26854-81-9 28378-18-9 50812-37-8, Glutathione-S-transferase 98849-88-8, FLAG peptide
RL: ARG (Analytical reagent use); BSU (Biological study, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)
(as chem. handle on biosensor for use in isolating or immobilizing biosensor; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 50-37-3, LSD 55-86-7, Nitrogen mustard 74-90-8, Hydrogen cyanide, analysis 75-44-5, Phosgene 76-06-2, Chloropicrin 77-81-6, Tabun 96-64-0, Soman 107-44-8, Sarin 257-07-8, CR 329-99-7 382-21-8, Perfluoroisobutylene 437-38-7D, Fentanyl, compds. 503-38-8, Diphosgene 506-77-4, Cyanogen chloride 541-25-3, Lewisite 578-94-9, Adamsite 593-89-5, Methyldichloroarsine 598-14-1, Ethyldichloroarsine 696-28-6 712-48-1, Diphenylchloroarsine 1314-13-2, Zinc oxide, analysis 1341-24-8, Chloroacetophenone 1794-86-1, Phosgene oxime 2698-41-1, CS 3563-36-8, Sesqui mustard 7550-45-0, Titanium tetrachloride, analysis 7647-01-0, Hydrogen chloride, analysis 7782-50-5, Chlorine, analysis 7784-42-1, Arsine 10102-43-9, Nitrogen oxide (NO), analysis 23525-22-6, Diphenylcyanoarsine 25037-78-9, VE 35513-90-7, VM 50782-69-9, VX 70268-40-5 70288-88-9
RL: ANT (Analyte); ANST (Analytical study)
(as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 300-54-9, Muscarine 463-77-4D, Carbamic acid, compds. 520-52-5, Psilocybin 2552-55-8, Ibotenic acid 2763-96-4, Muscimol 4368-28-9, Tetrodotoxin 7440-28-0, Thallium, analysis 7440-31-5, Tin, analysis 7440-36-0, Antimony, analysis 7440-66-6, Zinc, analysis 7681-49-4, Sodium fluoride, analysis 51481-10-8, Vomitoxin
RL: ANT (Analyte); ANST (Analytical study)
(as contaminant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 50-29-3, DDT, analysis 50-32-8, Benzopyrene, analysis 53-70-3, Dibenz[a,h]anthracene 60-57-1, Dieldrin 75-01-4, Vinyl chloride, analysis 87-68-3, Hexachlorobutadiene 12789-03-6, Chlordane 18540-29-9, Chromium6+, analysis 56832-73-6, Benzofluoranthene
RL: ANT (Analyte); ANST (Analytical study)
(as hazardous substance, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 7440-38-2, Arsenic, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 7439-92-1, Lead, analysis 7439-97-6, Mercury, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as pollutant; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 57-12-5, Cyanide, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as soil pollutant or chem. warfare agent, detection of; optical

biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 67-64-1, Acetone, analysis 67-66-3, Chloroform, analysis 71-43-2, Benzene, analysis 79-01-6, Trichloroethylene, analysis 92-52-4D, 1,1'-Biphenyl, chloro derivs. 108-88-3, Toluene, analysis 127-18-4, Tetrachloroethylene, analysis 7440-39-3, Barium, analysis 7440-43-9, Cadmium, analysis
RL: ANT (Analyte); ANST (Analytical study)
(as soil pollutant, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 9002-84-0, Poly(tetra)fluoroethylene
RL: ANT (Analyte); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as substrate and as detectable chem. warfare agent; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 7440-50-8, Copper, analysis
RL: ANT (Analyte); DEV (Device component use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)
(as substrate or as contaminant to be detected; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 1303-00-0, Gallium arsenide, uses 1314-61-0, Tantalum oxide 1344-28-1, Alumina, uses 7429-90-5, Aluminum, uses 7440-06-4, Platinum, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7440-56-4, Germanium, uses 7440-57-5, Gold, uses 7631-86-9, Silica, uses 9002-81-7, Polyoxymethylene 9002-88-4, Polyethylene 9002-98-6 9003-05-8, Polyacrylamide 9003-17-2, Polyvinylethylene 9003-53-6, Polystyrene 9011-14-7, Polymethyl methacrylate 9016-00-6, Polydimethylsiloxane 12033-89-5, Silicon nitride, uses 13463-67-7, Titania, uses 14808-60-7, Quartz, uses 24937-79-9, Polyvinylidenedifluoride 25249-16-5 25585-20-0, Polymethacrylimide 25587-79-5, Polypropylethylene 31694-16-3 31900-57-9, Polydimethylsiloxane 59269-51-1, Polyvinylphenol
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(as substrate; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

IT 7723-14-0, Phosphorus, analysis
RL: ANT (Analyte); ANST (Analytical study)
(red, as chem. warfare agent, detection of; optical biosensors having target recognition component and reporter sensitive to changes in microenvironment)

L5 ANSWER 21 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:857205 CAPLUS
DN 141:350541
ED Entered STN: 18 Oct 2004
TI ***Two*** - ***photon*** absorbing polymerizable composition and polymerization process thereof
IN Takizawa, Hiroo; Akiba, Masaharu; Tani, Takeharu
PA Fuji Photo Film Co., Ltd., Japan
SO U.S. Pat. Appl. Publ., 44 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM C08F002-46
INCL 522002000; 522006000
CC 35-3 (Chemistry of Synthetic High Polymers)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004204513	A1	20041014	US 2004-804144	20040319
	JP 2004292475	A2	20041021	JP 2003-82730	20030325
	JP 2004292476	A2	20041021	JP 2003-82732	20030325
PRAI	JP 2003-82730	A	20030325		
	JP 2003-82732	A	20030325		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004204513	ICM	C08F002-46

INCL 522002000; 522006000
IPCI C08F0002-46 [ICM,7]
IPCR C08F0002-46 [I,C]; C08F0002-50 [I,A]; G03F0007-00 [I,A]; G03F0007-00 [I,C]; G03F0007-031 [I,A]; G03F0007-031 [I,C]; G03F0007-20 [I,A]; G03F0007-20 [I,C]
NCL 522/002.000
ECLA C08F002/50; G03F007/00S; G03F007/031; G03F007/20S2
JP 2004292475 IPCI C08F0002-46 [ICM,7]
FTERM 4J011/QA04; 4J011/SA62; 4J011/SA78; 4J011/SA82; 4J011/SA83; 4J011/SA87; 4J011/UA02; 4J011/WA10
JP 2004292476 IPCI C08F0002-46 [ICM,7]; C08G0065-04 [ICS,7]
FTERM 4J005/AA02; 4J005/BB02; 4J011/QA04; 4J011/SA62; 4J011/SA78; 4J011/SA82; 4J011/SA83; 4J011/SA87; 4J011/SA88; 4J011/UA02; 4J011/WA10
OS MARPAT 141:350541
AB A ***two*** - ***photon*** absorbing polymerizable compn. contains at least a ***two*** - ***photon*** absorbing compd., a polymn. initiator and a polymerizable compd. (e.g., an epoxy compd. or an acrylate compd.), the compn. being photopolymerizable upon non-resonant ***two*** - ***photon*** absorption, wherein the ***two*** - ***photon*** absorbing compd. is a ***methine*** dye.
ST ***two*** ***photon*** absorbing polymerizable compn; three dimensional optical recording material
IT Stereolithography
(compn.; ***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT Optical recording materials
(three-dimensional; ***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT Polymerization
(***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT ***Cyanine*** dyes
Polymerization catalysts
(***two*** - ***photon*** absorbing; ***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT 681836-47-5P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(dark green; ***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT 33628-03-4P 78902-42-8P 718636-60-3P 774216-84-1P
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT 500908-05-4P 774611-29-9P
RL: IMF (Industrial manufacture); PREP (Preparation)
(***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT 54443-93-5P 66142-15-2P 88253-66-1P 88340-89-0P 681836-46-4P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)
IT 115-80-0, Triethyl orthopropionate 120-92-3, Cyclopentanone 273-53-0, Benzoxazole 769-42-6 927-63-9 1120-71-4, Propanesultone 1497-49-0 4485-89-6 4637-24-5 5217-47-0 29636-96-2 165547-54-6 398522-14-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(***two*** - ***photon*** absorbing polymerizable compn. and polymn. process thereof)

L5 ANSWER 22 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:609618 CAPLUS
DN 141:142582
ED Entered STN: 30 Jul 2004
TI Block polymer processing for mesostructured inorganic oxide materials
IN Chmelka, Bradley F.; Danielson, Earl; Stucky, Galen D.
PA USA
SO U.S. Pat. Appl. Publ., 88 pp., Cont.-in-part of U.S. Ser. No. 426,441.
CODEN: USXXCO

DT Patent
LA English
IC ICM B01D015-00
ICS C02F001-42
INCL 210660000; 521050000
CC 48-1 (Unit Operations and Processes)
Section cross-reference(s): 38, 46, 49, 67, 74
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004144726	A1	20040729	US 2004-736462	20040405
	WO 9937705	A1	19990729	WO 1998-US26201	19981209
	W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6592764	B1	20030715	US 2000-554259	20001211
	US 2003205528	A1	20031106	US 2003-426441	20030430
PRAI	WO 1998-US26201	W	19981209		
	US 2000-554259	A1	20001211		
	US 2002-434032P	P	20021217		
	US 2003-426441	A2	20030430		
	US 1997-69143P	P	19971209		
	US 1998-97012P	P	19980818		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004144726	ICM	B01D015-00
	ICS	C02F001-42
	INCL	210660000; 521050000
	IPCI	B01D0015-00 [ICM,7]; C02F0001-42 [ICS,7]
	IPCR	B01D0015-00 [I,A]; B01D0015-00 [I,C]; B01J0020-06 [I,A]; B01J0020-06 [I,C]; B01J0020-10 [I,A]; B01J0020-10 [I,C]; B01J0020-22 [I,C]; B01J0020-26 [I,A]; B01J0020-28 [I,A]; B01J0020-28 [I,C]; B01J0029-00 [I,C]; B01J0029-03 [I,A]; B01J0029-04 [I,A]; C07K0001-00 [I,C]; C07K0001-36 [I,A]; C08G0065-00 [I,C]; C08G0065-321 [I,A]; C08G0065-324 [I,A]; C08G0083-00 [I,A]; C08G0083-00 [I,C]
	NCL	210/660.000
	ECLA	B01D015/00; B01J020/06; B01J020/10B; B01J020/26; B01J020/28; B01J029/03A; B01J029/04A; C07K001/36; C08G065/321; C08G065/324; C08G083/00B
WO 9937705	IPCI	C08J0009-00 [ICM,6]; C08G0079-00 [ICS,6]; C08G0079-10 [ICS,6]; C08G0079-12 [ICS,6]
	IPCR	B01D0015-00 [I,A]; B01D0015-00 [I,C]; B01J0020-06 [I,A]; B01J0020-06 [I,C]; B01J0020-10 [I,A]; B01J0020-10 [I,C]; B01J0020-22 [I,C]; B01J0020-26 [I,A]; B01J0020-28 [I,A]; B01J0020-28 [I,C]; B01J0029-00 [I,C]; B01J0029-03 [I,A]; B01J0029-04 [I,A]; C07K0001-00 [I,C]; C07K0001-34 [I,A]; C08G0065-00 [I,C]; C08G0065-321 [I,A]; C08G0065-324 [I,A]; C08G0079-00 [I,A]; C08G0079-00 [I,C]; C08G0083-00 [I,A]; C08G0083-00 [I,C]
	ECLA	B01D015/00; B01J020/06; B01J020/10B; B01J020/26; B01J020/28; B01J029/03A; B01J029/04A; C07K001/34; C08G065/321; C08G065/324; C08G079/00; C08G083/00B
US 6592764	IPCI	R01D0015-00 [ICM,7]
	IPCR	B01D0015-00 [I,A]; B01D0015-00 [I,C]; B01J0020-06 [I,A]; B01J0020-06 [I,C]; B01J0020-10 [I,A]; B01J0020-10 [I,C]; B01J0020-22 [I,C]; B01J0020-26 [I,A]; B01J0020-28 [I,A]; B01J0020-28 [I,C]; B01J0029-00 [I,C]; B01J0029-03 [I,A]; B01J0029-04 [I,A]; C07K0001-00 [I,C]; C07K0001-34 [I,A]; C07K0001-36 [I,A]; C08G0065-00 [I,C]; C08G0065-321 [I,A]; C08G0065-324 [I,A]; C08G0079-00 [I,A]; C08G0079-00 [I,C]; C08G0083-00 [I,A]; C08G0083-00 [I,C]
	NCL	210/660.000; 428/391.000; 428/404.000; 501/012.000;

		502/407.000; 502/527.240; 516/100.000; 516/111.000; 530/417.000
	ECLA	B01D015/00; B01J020/06; B01J020/10B; B01J020/26; B01J020/28; B01J029/03A; B01J029/04A; C07K001/34; C07K001/36; C08G065/321; C08G065/324; C08G079/00; C08G083/00B
US 2003205528	IPCI	C02F0001-42 [ICM,7]
	IPCR	B01D0015-00 [I,A]; B01D0015-00 [I,C]; B01J0020-06 [I,A]; B01J0020-06 [I,C]; B01J0020-10 [I,A]; B01J0020-10 [I,C]; B01J0020-22 [I,C]; B01J0020-26 [I,A]; B01J0020-28 [I,A]; B01J0020-28 [I,C]; B01J0029-00 [I,C]; B01J0029-03 [I,A]; B01J0029-04 [I,A]; C07K0001-00 [I,C]; C07K0001-34 [I,A]; C07K0001-36 [I,A]; C08G0065-00 [I,C]; C08G0065-321 [I,A]; C08G0065-324 [I,A]; C08G0079-00 [I,A]; C08G0079-00 [I,C]; C08G0083-00 [I,A]; C08G0083-00 [I,C]
	NCL	210/660.000
	ECLA	B01D015/00; B01J020/06; B01J020/10B; B01J020/26; B01J020/28; B01J029/03A; B01J029/04A; C07K001/34; C07K001/36; C08G065/321; C08G065/324; C08G079/00; C08G083/00B

AB Mesoscopically ordered, hydrothermally stable metal oxide-block copolymer composite or mesoporous materials are described herein that are formed by using amphiphilic block copolymers which act as structure directing agents for the metal oxide in a self-assembling system.

ST block co polymer sol gel processing mesostructured inorg oxide; porous mesoporous composite oxide surfactant porogen self assembly polyoxyalkylene; nonionic zwitterionic cationic surfactant porogen inorg polymn filled mesopore; copolymer photochromic dye filled pore absorbent fiber variable dipole

IT Porous materials
(adsorbents, mesoporous; block polymer processing for mesostructured inorg. oxide materials)

IT Calcination
(after initial gelation to remove orgs.; block polymer processing for mesostructured inorg. oxide materials)

IT Surfactants
(amphiphilic; block polymer processing for mesostructured inorg. oxide materials)

IT Cyclic compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(annulenes, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Polycyclic compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(arom., material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Ceramic membranes
Composites
Mesophase
Pore size
Pore size distribution
Porogens
Porosity
Self-assembly
Sol-gel processing
(block polymer processing for mesostructured inorg. oxide materials)

IT Polyoxyalkylenes, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT Chlorides, processes
Sulfates, processes
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT Oxides (inorganic), processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC

(Process)
(block polymer processing for mesostructured inorg. oxide materials)

IT Transition metal oxides
Zeolite MCM-41
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT Polyoxyalkylenes, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(block, diblock, Tetronic 908, 901, 90R4; block polymer processing for mesostructured inorg. oxide materials)

IT Polymers, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(block, nonionic and amphiphilic; block polymer processing for mesostructured inorg. oxide materials)

IT Polymers, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(block, triblock; block polymer processing for mesostructured inorg. oxide materials)

IT Surfactants
(cationic; block polymer processing for mesostructured inorg. oxide materials)

IT Unsaturated compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(***cyanines*** , material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Photochromic materials
(dyes, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Lenses
(formation of; block polymer processing for mesostructured inorg. oxide materials)

IT Quaternary ammonium compounds, processes
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(halides; block polymer processing for mesostructured inorg. oxide materials)

IT Dipole moment
(induced, of pore-filling material, varies with pore size; block polymer processing for mesostructured inorg. oxide materials)

IT Dyes
(material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Polyenes
Porphyrins
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Order
(mesopore range order; block polymer processing for mesostructured inorg. oxide materials)

IT Pore
(mesopore, hexagonal; block polymer processing for mesostructured inorg. oxide materials)

IT Fibers
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(mesoporous org.-inorg. composites; block polymer processing for mesostructured inorg. oxide materials)

IT Catalyst supports
Electric insulators
Molecular sieves
Porous materials

Semiconductor materials
(mesoporous; block polymer processing for mesostructured inorg. oxide materials)

IT Chlorides, processes
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(metallo-org., oxide precursors; block polymer processing for mesostructured inorg. oxide materials)

IT Chromophores
(***multi*** - ***photon*** , material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT ***Cyanine*** dyes
(near-IR-absorbing, ***polymethines*** and meropolymethines, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Dyes
(near-IR-absorbing, with .pi.- conjugation, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Surfactants
(nonionic; block polymer processing for mesostructured inorg. oxide materials)

IT Dielectric constant
(of mesoporous particle and pore-filling material, change with porosity and applied elec., optical, or thermal fields; block polymer processing for mesostructured inorg. oxide materials)

IT Refractive index
(of mesoporous particle, change with porosity and applied elec., optical, or thermal fields; block polymer processing for mesostructured inorg. oxide materials)

IT Dipole moment
(of mesoporous particles and pore-filling material, variable; block polymer processing for mesostructured inorg. oxide materials)

IT Electric field effects
(on dielec. const. and refractive index of mesoporous composites; block polymer processing for mesostructured inorg. oxide materials)

IT Conjugation (bond)
(org. mols. contg., material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Spiro compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(oxazines, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Pyridinium compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(phenolate derivs., inner salts, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Dyes
Surfactants
(photochromic, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Aromatic compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polycyclic, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Sol-gel processing
(polymn., of inorg. compds.; block polymer processing for mesostructured inorg. oxide materials)

IT Adsorbents
(porous, mesoporous; block polymer processing for mesostructured inorg. oxide materials)

IT Spiro compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(pyrans, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Halides
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical

process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(quaternary ammonium halides; block polymer processing for mesostructured inorg. oxide materials)

IT Polymerization
(sol-gel, of inorg. compds.; block polymer processing for mesostructured inorg. oxide materials)

IT Heterocyclic compounds
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(spiropyrans, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT Latex
(templates; block polymer processing for mesostructured inorg. oxide materials)

IT Surfactants
(zwitterionic, N-pyridinium phenolates, material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT 9004-95-9, Brij 52
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(Brij 52, 56, 58; block polymer processing for mesostructured inorg. oxide materials)

IT 106392-12-5, Ethylene oxide-propylene oxide block copolymer
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(Pluronic F, L, P, and R series and Tetronic 901, 908, and 90R4 series; block polymer processing for mesostructured inorg. oxide materials)

IT 60828-78-6, Tergitol TMN 6
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(Tergitol TMN 6, TMN 10; block polymer processing for mesostructured inorg. oxide materials)

IT 9002-93-1, Triton X100
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(Triton X100 and Triton X114; block polymer processing for mesostructured inorg. oxide materials)

IT 64-17-5, Ethanol, uses 107-21-1, Ethylene glycol, uses
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 7447-40-7, Potassium chloride, processes
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 75-59-2, Tetramethylammonium hydroxide 112-02-7, Cetyltrimethylammonium chloride 9004-98-2, Brij 96 9005-00-9, Brij 76 9005-64-5, Tween 20 9005-65-6, Tween 80 9005-66-7, Tween 40 9005-67-8, Tween 60 26266-57-9, Span 40 139323-06-1, Ethylene oxide-butylene oxide block copolymer
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 57-09-0, CTAB
RL: MOA (Modifier or additive use); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 7447-41-8, Lithium chloride (LiCl), uses 7487-88-9, Sulfuric acid magnesium salt (1:1), uses 7631-99-4, Nitric acid sodium salt, uses 7757-82-6, Sodium sulfate (Na2SO4), uses 7786-30-3, Magnesium chloride (MgCl2), uses 12125-02-9, Ammonium chloride (NH4Cl), uses
RL: NUU (Other use, unclassified); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 7647-14-5, Sodium chloride, processes 7786-81-4, Nickel sulfate (NiSO4)

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 7647-01-0, Hydrochloric acid, reactions
RL: NUU (Other use, unclassified); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 7631-86-9P, Silica, processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 1313-96-8P, Niobium oxide (Nb2O5) 1314-35-8P, Tungsten trioxide, properties 1314-61-0P, Tantalum oxide (Ta2O5) 1344-28-1P, Alumina, properties 12036-70-3P, Titanium zirconium oxide (TiZrO4) 12055-23-1P, Hafnium dioxide (HfO2) 16853-74-0P, Tungsten zirconium oxide (W2ZrO8) 18282-10-5P, Tin dioxide 19114-55-7P, Silicon titanium oxide (SiTiO4) 22708-90-3P 233672-64-5P, Aluminum oxide silicate (AlO1.5(SiO4))
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(block polymer processing for mesostructured inorg. oxide materials)

IT 78-10-4, Tetraethoxysilane 1302-42-7, Aluminum sodium oxide (AlNaO2)
RL: RCT (Reactant); RACT (Reactant or reagent)
(block polymer processing for mesostructured inorg. oxide materials)

IT 7440-67-7P, Zirconium, processes
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
(composite film with Pluronic; block polymer processing for mesostructured inorg. oxide materials)

IT 108-67-8, 1,3,5-TriMethylBenzene, uses
RL: MOA (Modifier or additive use); NUU (Other use, unclassified); USES (Uses)
(cosolvent, porogen; block polymer processing for mesostructured inorg. oxide materials)

IT 9002-92-0
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(d.p. 23, and Brij 30; block polymer processing for mesostructured inorg. oxide materials)

IT 27333-47-7, 1,3,3-Trimethylspiro[indoline-2,3'-[3H]naphth[2,1-b][1,4]oxazine
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(dye; block polymer processing for mesostructured inorg. oxide materials)

IT 103-33-3D, Azobenzene, derivs.
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(material partially filling mesopores; block polymer processing for mesostructured inorg. oxide materials)

IT 7446-70-0, Aluminum chloride (AlCl3), processes 7447-39-4, Copper chloride (CuCl2), processes 7550-45-0, Titanium chloride (TiCl4), processes 7632-51-1, Vanadium chloride (VCl4) 7646-78-8, Tin chloride (SnCl4), processes 7646-85-7, Zinc chloride (ZnCl2), processes 7647-18-9, Antimony chloride (SbCl5) 7705-08-0, Iron chloride (FeCl3), processes 7718-54-9, Nickel chloride (NiCl2), processes 7721-01-9, Tantalum chloride (TaCl5) 7773-01-5, Manganese chloride (MnCl2) 10025-73-7, Chromium chloride (CrCl3) 10025-82-8, Indium chloride (InCl3) 10026-04-7, Silicon chloride (SiCl4) 10026-11-6, Zirconium chloride (ZrCl4) 10026-12-7, Niobium chloride (NbCl5) 10038-98-9, Germanium chloride (GeCl4) 10049-08-8, Ruthenium chloride (RuCl3) 10108-64-2, Cadmium chloride (CdCl2) 10241-05-1, Molybdenum chloride (MoCl5) 13283-01-7, Tungsten chloride (WCl6) 13499-05-3, Hafnium chloride (HfCl4) 13596-35-5, Rhenium chloride (ReCl5)
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(oxide precursor; block polymer processing for mesostructured inorg. oxide materials)

IT 1498-88-0
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(spiropyran dye; block polymer processing for mesostructured inorg.

oxide materials)
IT 1314-23-4P, Zirconium dioxide, properties 13463-67-7P, Titanium dioxide, properties
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(with nanocrystals; block polymer processing for mesostructured inorg. oxide materials)

L5 ANSWER 23 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1058477 CAPLUS
DN 142:45976
ED Entered STN: 10 Dec 2004
TI Polymerizable compositions showing nonresonant ***two*** - ***photon*** absorption and method for three-dimensional refractive index modulation of them and optical recording therewith
IN Takizawa, Hiroo
PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 63 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08F002-44
ICS C08F291-00; C08K005-00; C08L101-00; G02F001-361; G03F007-004; G11B007-24; C09B023-00
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 41, 73
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004346238	A2	20041209	JP 2003-146527	20030523
	US 2004245432	A1	20041209	US 2004-849519	20040520
PRAI	JP 2003-146527	A	20030523		
	JP 2003-312744	A	20030904		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004346238	ICM	C08F002-44
	ICS	C08F291-00; C08K005-00; C08L101-00; G02F001-361; G03F007-004; G11B007-24; C09B023-00
	IPCI	C08F0002-44 [ICM,7]; C08F0291-00 [ICS,7]; C08K0005-00 [ICS,7]; C08L0101-00 [ICS,7]; G02F0001-361 [ICS,7]; G03F0007-004 [ICS,7]; G11B0007-24 [ICS,7]; C09B0023-00 [ICS,7]
	FTERM	2H025/AA01; 2H025/AB14; 2H025/AC08; 2H025/AD01; 2H025/BC13; 2H025/BC51; 2H025/BD03; 2H025/BH05; 2H025/CA00; 2H025/CA41; 2H025/CA48; 2H025/CB04; 2H025/CB07; 2H025/CB41; 2K002/AA01; 2K002/AB40; 2K002/BA01; 2K002/CA06; 2K002/HA16; 4H056/CA01; 4H056/CA02; 4H056/CA05; 4H056/CB01; 4H056/CC02; 4H056/CC04; 4H056/CC08; 4H056/CD05; 4H056/CE02; 4H056/CE03; 4H056/CE06; 4H056/DD03; 4H056/DD06; 4H056/DD16; 4H056/DD19; 4H056/DD23; 4H056/DD29; 4J002/AB021; 4J002/BC021; 4J002/BC111; 4J002/BC121; 4J002/BD121; 4J002/BE021; 4J002/BE061; 4J002/BF021; 4J002/BG021; 4J002/EL126; 4J002/ET006; 4J002/EU026; 4J002/EU116; 4J002/EU126; 4J002/EU136; 4J002/EU226; 4J002/EV306; 4J002/EV326; 4J002/FD096; 4J002/GS02; 4J011/AC04; 4J011/PA53; 4J011/PA66; 4J011/PA67; 4J011/PA68; 4J011/PB40; 4J011/PC02; 4J011/PC08; 4J026/AA02; 4J026/AA26; 4J026/AA30; 4J026/AA34; 4J026/AA38; 4J026/AC36; 4J026/BA05; 4J026/BA08; 4J026/BA27; 4J026/BA28; 4J026/BA29; 4J026/BA30; 4J026/BA40; 4J026/DB06; 4J026/DB15; 4J026/DB36; 4J026/FA05; 4J026/GA09; 5D029/JA04; 5D029/JB11; 5D029/JC17
US 2004245432	IPCI	H01L0027-00 [ICM,7]
	IPCR	H01L0027-00 [I,A]; H01L0027-00 [I,C]
	NCL	250/208.100

OS MARPAT 142:45976
AB The compns. comprise (A) ***two*** - ***photon*** -absorbing compds. (e.g., ***methine*** dyes, phthalocyanine dyes, ***merocyanine***

dyes, oxonol dyes), (B) (radical- or acid-generating) polymn. initiators, (C) (radically or cationically polymerizable) monomers, and (D) binders. For modulation of refractive index, the compns. are photopolymd. by ***two*** - ***photon*** absorption induced by laser irradn. at linear absorption-free wavelength which is longer than linear absorption bands of A. After the irradn., compn. ratio of C and C polymers to D in the compns. is unequalized between at focal regions and at the other regions, allowing the refractive index modulation and three-dimensional optical recording.

ST nonresonant ***two*** ***photon*** absorption three dimensional photopolymn; ***cyanine*** ***merocyanine*** oxonol dye ***two*** ***photon*** absorption; laser irradn nonlinear refractive index modulation; optical recording refractive index laser photopolymn disproportionation; ***two*** ***photon*** absorption three dimensional optical recording

IT Polysiloxanes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Me Ph, binders; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Polymerization catalysts
(acid-generating; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Fluoropolymers, uses
Polyvinyl butyrals
RL: TEM (Technical or engineered material use); USES (Uses)
(binders; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Polyvinyl acetals
RL: TEM (Technical or engineered material use); USES (Uses)
(formals, binders; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Optical recording
(laser, three-dimensional; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT ***Two*** - ***photon*** absorption
(nonlinear, nonresonant; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Dyes
(org.; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Polymerization
(photopolymn.; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT ***Cyanine*** dyes
(polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Polymerization catalysts
(radical; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Optical modulation
(refractive index; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT Nonlinear optical absorption
(***two*** - ***photon*** , nonresonant; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

IT 9002-89-5, Poly(vinyl alcohol) 9003-20-7, Poly(vinyl acetate)
9003-53-6, Polystyrene 9004-36-8, CAB
RL: TEM (Technical or engineered material use); USES (Uses)
(binders; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index

modulation and optical recording)
IT 574-93-6, Phthalocyanine
RL: TEM (Technical or engineered material use); USES (Uses)
(dyes; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 54443-93-5P 66142-15-2P 88253-66-1P 88340-89-0P 681836-46-4P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(in prepn. of ***two*** - ***photon*** -absorbing dyes; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 67-52-7, Barbituric acid 115-80-0, Triethyl orthopropionate 120-92-3, Cyclopentanone 504-17-6, Thiobarbituric acid 927-63-9 1120-71-4, Propanesultone 1497-49-0 4485-89-6 4637-24-5 29636-96-2 61931-68-8 165547-54-6 398522-14-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(in prepn. of ***two*** - ***photon*** -absorbing dyes; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 307-98-2 1484-13-5 1675-54-3, Bisphenol a diglycidyl ether 2386-87-0 3530-36-7 3741-77-3 18724-32-8 52684-34-1
RL: RCT (Reactant); TEM (Technical or engineered material use); RACT (Reactant or reagent); USES (Uses)
(monomers; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 25085-98-7P 25085-99-8P, Bisphenol a diglycidyl ether homopolymer 26337-50-8P 34558-43-5P 121225-97-6P 805231-70-3P 805231-71-4P 805231-72-5P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polymers; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 20444-09-1 57840-38-7, Triphenylsulfonium hexafluoroantimonate 58109-40-3, Diphenyliodonium hexafluorophosphate 120307-06-4 125407-19-4 132838-87-0 153148-27-7 442199-78-2
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(polymn. initiators; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 805231-69-0 805244-72-8
RL: CAT (Catalyst use); TEM (Technical or engineered material use); USES (Uses)
(***two*** - ***photon*** -absorbing dyes, polymn. initiators; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 33628-03-4P 78902-42-8P 681836-47-5P 718636-60-3P 774216-84-1P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(***two*** - ***photon*** -absorbing dyes; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)
IT 52560-25-5 680232-65-9 718636-62-5 718636-63-6
RL: TEM (Technical or engineered material use); USES (Uses)
(***two*** - ***photon*** -absorbing dyes; polymerizable compns. showing nonresonant ***two*** - ***photon*** absorption for three-dimensional refractive index modulation and optical recording)

L5 ANSWER 24 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:904337 CAPLUS
DN 141:376818
ED Entered STN: 29 Oct 2004
TI Photolabeling method and photolabeling compositions containing photoaffinity labeling compounds and ***two*** - ***photon*** -excited compounds
IN Inagaki, Yoshio; Takizawa, Hiroo; Akiba, Masaharu

PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G01N021-78
ICS G01N001-28; G01N021-64; C09B023-00
CC 9-16 (Biochemical Methods)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004301681	A2	20041028	JP 2003-95284	20030331
PRAI JP 2003-95284		20030331		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004301681	ICM	G01N021-78
	ICS	G01N001-28; G01N021-64; C09B023-00
	IPCI	G01N0021-78 [ICM,7]; G01N0001-28 [ICS,7]; G01N0021-64 [ICS,7]; C09B0023-00 [ICS,7]
	FTERM	2G043/DA02; 2G043/EA01; 2G043/GA07; 2G043/GB21; 2G043/HA01; 2G043/KA09; 2G043/LA01; 2G052/AA28; 2G052/AB16; 2G052/AD26; 2G052/AD46; 2G052/GA11; 2G052/JA11; 2G054/CE02; 2G054/EA01; 2G054/EA03; 4H056/CA02; 4H056/CA05; 4H056/CB01; 4H056/CB07; 4H056/CC08; 4H056/CE03; 4H056/CE06; 4H056/DD03; 4H056/DD04; 4H056/DD19

OS MARPAT 141:376818
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Photolabeling of compds. is performed by ***two*** - ***photon*** excitation of (a) compds. which have ***two*** - ***photon*** absorption cross section .gtoreq.1000 GM in the presence of (b) photoaffinity labeling compds. to induce decompn. of (b). Also claimed are photolabeling compns. contg. (a) and (b). (a) may be ***cyanine*** dyes I (R1-R5 = H, substituent; some of R1-R6 may be bonded together to form a ring; n, m = 1-4; R7, R8 = H, alkyl, alkenyl, aryl, heterocyclyl; Z1, Z2 = 5- or 6-membered ring-forming at. group). Thus, a compn. contg. II, azide compd. III, and DMSO was mixed with an aq. gelatin soln. and made into a 2 mm-thick film, which was irradiated with 780-nm laser in the dark. The film showed fluorescence only in the irradiated area upon UV irradn.

ST photoaffinity labeling ***two*** ***photon*** excited ***cyanine*** dye

IT Gelatins, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoaffinity labeling of; photoaffinity labeling using compds. which are ***two*** - ***photon*** excited to induce decompn. of the labeling agents)

IT ***Cyanine*** dyes
Photoaffinity labeling
(photoaffinity labeling using compds. which are ***two*** - ***photon*** excited to induce decompn. of the labeling agents)

IT Photoexcitation
(***two*** - ***photon*** ; photoaffinity labeling using compds. which are ***two*** - ***photon*** excited to induce decompn. of the labeling agents)

IT 783370-28-5 783370-29-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoaffinity labeling using compds. which are ***two*** - ***photon*** excited to induce decompn. of the labeling agents)

L5 ANSWER 25 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:738967 CAPLUS
DN 141:268141
ED Entered STN: 10 Sep 2004
TI ***Methine*** compounds, nonresonant ***two*** - ***photon***

-absorbing or -emitting materials containing them, and method for nonresonant ***two*** - ***photon*** absorption or emission with high efficiency by laser irradiation to them

IN Akiba, Masaharu; Ogiyama, Katsushi; Morinaga, Naoki; Tani, Takeharu; Inagaki, Yoshio; Ichishima, Yasushi

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 22 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09K011-06
ICS C07C225-22; C09B023-00; G02F001-361

CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 24

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004250545	A2	20040909	JP 2003-41468	20030219

PRAI JP 2003-41468 20030219

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004250545	ICM	C09K011-06
	ICS	C07C225-22; C09B023-00; G02F001-361
	IPCI	C09K0011-06 [ICM,7]; C07C0225-22 [ICS,7]; C09B0023-00 [ICS,7]; G02F0001-361 [ICS,7]
	FTERM	2K002/AB12; 2K002/AB27; 2K002/BA01; 2K002/CA06; 2K002/HA13; 4H006/AA01; 4H006/AB92; 4H006/BJ50; 4H006/BR70; 4H006/BU46; 4H056/CA02; 4H056/CA05; 4H056/CB01; 4H056/CE02; 4H056/FA06

OS MARPAT 141:268141

GI

/ Structure 1 in file .gra /

AB The materials contain the compds. depicted as I [R11-16 = H, substituent; R17 = substituent; X11,12 = (un)substituted aryl or heterocyclic group; m1, n1, i1 = 0-4] or II [R21-24 = H, substituent; R25 = substituent; R26,27 = H, alkyl, alkenyl, aryl, heterocyclic group; Z21,22 = at. group forming N-contg. 5- or 6-membered ring; m2, n2, i2 = 0-4].

ST nonresonant ***two*** ***photon*** absorption emission efficiency; ***methine*** nonlinear optical material laser irradn

IT Laser radiation
Luminescent substances
Nonlinear optical materials
Two - ***photon*** absorption
(nonresonant ***two*** - ***photon*** absorption or emission with high efficiency by laser irradn. to ***methine*** compds.)

IT Photoemission
(***two*** - ***photon*** ; nonresonant ***two*** - ***photon*** absorption or emission with high efficiency by laser irradn. to ***methine*** compds.)

IT 22480-76-8P 752253-82-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(for ***methine*** compd. prepn.; nonresonant ***two*** - ***photon*** absorption or emission with high efficiency by laser irradn. to ***methine*** compds.)

IT 6203-18-5, p-(N,N-Dimethylamino)cinnamaldehyde 19686-79-4, 4-Cyclohepten-1-one
RL: RCT (Reactant); RACT (Reactant or reagent)
(for ***methine*** compd. prepn.; nonresonant ***two*** - ***photon*** absorption or emission with high efficiency by laser irradn. to ***methine*** compds.)

IT 752253-83-1P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(***methine*** compd.; nonresonant ***two*** - ***photon*** absorption or emission with high efficiency by laser irradn. to

methine compds.)

L5 ANSWER 26 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:305221 CAPLUS
DN 140:347135
ED Entered STN: 15 Apr 2004
TI Nonresonant ***two*** - ***photon*** -absorbing material, nonresonant ***two*** - ***photon*** -emitting material, and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission by using the material
IN Takizawa, Hiroo; Tani, Takeharu; Morinaga, Naoki
PA Fuji Photo Film Co., Ltd., Japan
SO Eur. Pat. Appl., 46 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G02F001-361
ICS G03F007-00
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 41, 74
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1408366	A2	20040414	EP 2003-22697	20031007
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004279794	A2	20041007	JP 2003-71874	20030317
	JP 2004279795	A2	20041007	JP 2003-71875	20030317
	JP 2004149517	A2	20040527	JP 2003-337029	20030929
	US 2004086803	A1	20040506	US 2003-678301	20031006
	JP 2005025152	A2	20050127	JP 2003-351665	20031010
PRAI	JP 2002-293720	A	20021007		
	JP 2003-65580	A	20030311		
	JP 2003-71874	A	20030317		
	JP 2003-71875	A	20030317		
	JP 2003-168028	A	20030612		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1408366	ICM	G02F001-361
	ICS	G03F007-00
	IPCI	G02F0001-361 [ICM,7]; G03F0007-00 [ICS,7]
	ECLA	G02F001/361B2; G02F001/361D2; G03F007/00S; G03F007/20S2
JP 2004279794	IPCI	G02F0001-361 [ICM,7]; C09K0011-06 [ICS,7]; C09B0023-00 [ICS,7]
	FTERM	2K002/AB12; 2K002/BA01; 2K002/CA05; 2K002/GA07; 2K002/HA13; 4H056/CA01; 4H056/CC02; 4H056/CC04; 4H056/CC08; 4H056/CD04; 4H056/CD08; 4H056/CD09; 4H056/CE01; 4H056/CE03; 4H056/CE06; 4H056/DD06; 4H056/DD07; 4H056/DD12; 4H056/DD16; 4H056/DD19; 4H056/DD23; 4H056/DD28; 4H056/DD29
JP 2004279795	IPCI	G02F0001-361 [ICM,7]; C09K0011-06 [ICS,7]; C09B0023-00 [ICS,7]
	FTERM	2K002/AB12; 2K002/BA01; 2K002/CA06; 2K002/HA19; 4H056/CA02; 4H056/CC04; 4H056/CC08; 4H056/CD08; 4H056/CD09; 4H056/CD12; 4H056/CE01; 4H056/CE03; 4H056/CE06; 4H056/DD03; 4H056/DD04; 4H056/DD06; 4H056/DD07; 4H056/DD12; 4H056/DD16; 4H056/DD19; 4H056/DD23; 4H056/DD28; 4H056/DD29; 4H056/FA10
JP 2004149517	IPCI	C07C0049-683 [ICM,7]; C07C0255-34 [ICS,7]; C07C0309-14 [ICS,7]; C07D0263-56 [ICS,7]; C07D0277-64 [ICS,7]; C07F0001-08 [ICS,7]; C07F0003-02 [ICS,7]; C07F0003-06 [ICS,7]; C09K0011-06 [ICS,7]; G02F0001-361 [ICS,7]
	FTERM	2K002/AB12; 2K002/BA01; 2K002/CA05; 2K002/HA13; 4C056/AA01; 4C056/AB01; 4C056/AC02; 4C056/AD03; 4C056/AE03; 4H006/AA01; 4H006/AA03; 4H006/AB92; 4H006/BJ50; 4H006/BN20; 4H006/BR70; 4H006/BU42; 4H006/BU46; 4H006/BU50; 4H006/NB00; 4H048/AA01; 4H048/AA03; 4H048/AB92; 4H048/VA32; 4H048/VA56; 4H048/VA60; 4H048/VA66; 4H048/VB10
US 2004086803	IPCI	G11B0007-24 [ICM,7]

IPCR G02F0001-35 [I,C]; G02F0001-361 [I,A]; G03F0007-00 [I,A]; G03F0007-00 [I,C]; G03F0007-20 [I,A]; G03F0007-20 [I,C]
NCL 430/270.180
ECLA G02F001/361B2; G02F001/361D2; G03F007/00S; G03F007/20S2

JP 2005025152 IPCI G02F0001-361 [ICM,7]; C09B0023-00 [ICS,7]; C09K0011-06 [ICS,7]
FTERM 2K002/AA07; 2K002/AB29; 2K002/BA01; 2K002/CA06; 2K002/GA07; 2K002/HA22; 4H056/CA01; 4H056/CA05; 4H056/CC02; 4H056/CC08; 4H056/CE03; 4H056/CE06; 4H056/DD03; 4H056/DD04; 4H056/DD06; 4H056/DD07; 4H056/DD15; 4H056/DD19

OS MARPAT 140:347135

AB Nonresonant ***two*** - ***photon*** -absorbing materials are described which comprise a ***methine*** dye or a dye in an intramol. aggregation state. The ***methine*** dye is preferably a ***cyanine*** dye, a ***merocyanine*** dye, or an oxonol dye. ***Two*** - ***photon*** -emitting materials are also described which the ***two*** - ***photon*** -absorbing materials. Methods for inducing ***two*** - ***photon*** absorption and/or emission entailing irradiating the materials with laser radiation are also described. Optical recording media, three-dimensional vol. displays, and three-dimensional stereolithog. are also described which employ the materials.

ST nonresonant ***two*** ***photon*** absorbing emitting material; optical recording medium nonresonant ***two*** ***photon*** absorbing emitting material; three dimensional display ***two*** ***photon*** absorbing emitting material; stereolithog ***two*** ***photon*** absorbing emitting material

IT ***Cyanine*** dyes
Dyes
Luminescent substances
Nonlinear optical materials
Two - ***photon*** absorption
(nonresonant ***two*** - ***photon*** -absorbing and -emitting materials and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission using them and their use)

IT Optical recording materials
Stereolithography
(nonresonant ***two*** - ***photon*** -absorbing and -emitting materials and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission using them and their use in)

IT Optical imaging devices
(three-dimensional; nonresonant ***two*** - ***photon*** -absorbing and -emitting materials and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission using them and their use in)

IT 67-52-7, Barbituric acid 115-80-0, Triethyl orthopropionate 273-53-0, Benzoxazole 504-17-6, Thiobarbituric acid 1120-71-4, Propane sultone 4485-89-6 5608-83-3 29636-96-2 680232-64-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(nonresonant ***two*** - ***photon*** -absorbing and -emitting materials and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission using them and their use)

IT 54443-93-5P 66142-15-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(nonresonant ***two*** - ***photon*** -absorbing and -emitting materials and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission using them and their use)

IT 33628-03-4P 78902-42-8P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(nonresonant ***two*** - ***photon*** -absorbing and -emitting materials and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission using them and their use)

IT 14846-12-9 32976-69-5 40387-89-1 55935-20-1 65294-02-2 72076-49-4 102731-88-4 111545-69-8 115310-99-1 183272-14-2 308116-42-9 308116-44-1 337963-09-4 455329-63-2 680232-65-9 680232-66-0 680232-68-2 680232-69-3 680232-71-7 680232-73-9 680232-75-1 680232-77-3 680232-78-4 680232-79-5 680232-80-8 680232-81-9 680232-83-1 680232-84-2 680232-85-3 680232-87-5

680232-89-7 680232-90-0 680232-91-1 680232-92-2 680232-94-4
680232-95-5 680232-96-6 680233-01-6 680233-02-7
RL: TEM (Technical or engineered material use); USES (Uses)
(nonresonant ***two*** - ***photon*** -absorbing and -emitting materials and methods for inducing absorption or generating nonresonant ***two*** - ***photon*** emission using them and their use)

L5 ANSWER 27 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:495265 CAPLUS
DN 141:190350
ED Entered STN: 18 Jun 2004
TI ***Two*** - ***photon*** absorption in quadrupolar .pi.-conjugated molecules: Influence of the nature of the conjugated bridge and the donor-acceptor separation
AU Zojer, Egbert; Beljonne, David; Pacher, Peter; Bredas, Jean-Luc
CS Department of Chemistry, The University of Arizona, Tucson, AZ, 85721-0041, USA
SO Chemistry--A European Journal (2004), 10(11), 2668-2680
CODEN: CEUJED; ISSN: 0947-6539
PB Wiley-VCH Verlag GmbH & Co. KGaA
DT Journal
LA English
CC 22-2 (Physical Organic Chemistry)
Section cross-reference(s): 73
AB Quadrupolar-type substitution of .pi.-conjugated chromophores with donor and acceptor groups has been shown to increase their ***two*** - ***photon*** absorption (TPA) response by up to two orders of magnitude. Here, we apply highly correlated quantum-chem. calcns. to evaluate the impact of the nature of conjugated bridge and the charge-transfer distance on that enhancement. We compare chromophores with phenylenevinylene-, thienylenevinylene-, polyene-, and indenofluorene-type backbones substituted by dimethylamino and cyano groups. In all compds., we find a strongly TPA-active Ag state (either 2Ag or 3Ag) in the low-energy region, as well as a higher lying TPA-active state (mAg) at close to twice the energy of the lowest lying one-photon allowed state; the smaller energy detuning in the mAg states results in very large TPA cross sections .delta.. We also investigate the influence of the degree of ground-state polarization on TPA. Independent of the nature of the backbone and the donor-acceptor sepn., .delta. displays the same qual. evolution with a max. before the ***cyanine*** -like limit; the highest TPA cross sections are calcd. for distirylbenzene- and polyene-based systems.
ST ***two*** ***photon*** absorption quadrupolar pi conjugated mol MRD CI
IT Electronic transition
(dipole moment; theor. study on ***two*** - ***photon*** absorption in quadrupolar .pi.-conjugated mols.)
IT Conjugation (bond)
Electron transfer
Electronic transition
Two - ***photon*** absorption
(theor. study on ***two*** - ***photon*** absorption in quadrupolar .pi.-conjugated mols.)
IT Chromophores
(.pi.-conjugated; theor. study on ***two*** - ***photon*** absorption in quadrupolar .pi.-conjugated mols.)
IT 95548-96-2 320750-95-6 740802-22-6 740802-23-7 740802-25-9 740802-28-2
RL: PRP (Properties)
(theor. study on ***two*** - ***photon*** absorption in quadrupolar .pi.-conjugated mols.)
RE.CNT 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(2) Abotto, A; Org Lett 2002, V4, P1495
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L5 ANSWER 28 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:1064137 CAPLUS
DN 143:141656
ED Entered STN: 13 Dec 2004
TI Hybrid polaritons in strongly coupled microcavities: experiments and models
AU Lidzey, D. G.; Wenus, J.; Whittaker, D. M.; Itskos, G.; Stavrinou, P. N.; Bradley, D. D. C.; Murray, R.
CS Department of Physics and Astronomy, Hicks Building, The University of Sheffield, Sheffield, S3 7RH, UK
SO Journal of Luminescence (2004), 110(4), 347-353
CODEN: JLUMA8; ISSN: 0022-2313
PB Elsevier B.V.
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 41
AB The authors describe the fabrication of 1-dimensional quantum microcavities contg. two different layers of mol. J-aggregates. Strong coupling can occur between the confined cavity ***photon*** mode and the ***two*** different mol. exciton modes, leading to the appearance of new hybrid' polaritonic modes. Such hybrid states can be described in terms of a superposition of the cavity ***photon*** and the ***two*** excitonic states. The authors characterize such cavities as a function of external viewing angle by measuring both the white-light reflectivity and photoluminescence emission following nonresonant optical excitation. The authors apply a simple model to describe the photoluminescence emission from the cavity by assuming a transfer of population between the different hybrid-polariton modes. the authors describe the predictions of model and show that it provides a reasonable qual. description of the emission. The authors then use a transfer matrix scattering model to calc. the reflectivity spectra of a cavity, based on an org. semiconductor layer composed of a thin film of J-aggregates deposited onto an inorg. heterostructure contg. three InGaP quantum wells. Results demonstrate that optical hybridization may be expected between the org. and inorg. excitons in suitably designed structures.
ST hybrid polariton strongly coupled microcavities
IT Photon
(confined cavity; expts. and models for hybrid polaritons in strongly coupled microcavities)
IT Cavity resonators
Cyanine dyes
Exciton
J-aggregates
Luminescence
Polariton
Semiconductor devices
Semiconductor heterojunctions
(expts. and models for hybrid polaritons in strongly coupled microcavities)
IT Photoexcitation
(nonresonant; expts. and models for hybrid polaritons in strongly coupled microcavities)
IT Potential energy
(quantum well; expts. and models for hybrid polaritons in strongly coupled microcavities)
IT Optical reflection
(white-light; expts. and models for hybrid polaritons in strongly coupled microcavities)
IT 9003-53-6, Polystyrene
RL: DEV (Device component use); NUU (Other use, unclassified); TEM (Technical or engineered material use); USES (Uses)
(expts. and models for hybrid polaritons in strongly coupled microcavities)
IT 24054-55-5 106312-00-9, Gallium indium phosphide 738576-16-4 858948-58-0
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(expts. and models for hybrid polaritons in strongly coupled

microcavities)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 29 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 2
AN 2004:357788 CAPLUS
DN 141:284875
ED Entered STN: 03 May 2004
TI J band luminescence observed with excitation below the band-gap energy on ***cyanine*** J aggregate
AU Kurita, S.; Honma, T.; Nakamura, H.; Sekiya, T.; Nakajima, M.; Suemoto, T.
CS Faculty of Engineering, Department of Physics, Yokohama National University, Hodogaya-ku, Yokohama, 240-8501, Japan
SO Journal of Luminescence (2004), 108(1-4), 15-18
CODEN: JLUMA8; ISSN: 0022-2313
PB Elsevier Science B.V.
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 41
AB The luminescence of ***cyanine*** J aggregates was measured at room temp. The J band luminescence of a ***cyanine*** dye J aggregate occurs effectively even though the excitation is on the low-energy side (0.12 eV) of the J band. It is established this is not due to ***two*** - ***photon*** absorption. The lifetime of the J band luminescence with the low-energy excitation is 57 ps, in contrast to 10 ps for band-to-band excitation. The rise time is also different: 6 ps for the low-energy excitation and less than 1 ps for band-to-band excitation.
ST J band luminescence low energy excitation ***cyanine*** J aggregate
IT ***Cyanine*** dyes
Exciton luminescence
J-aggregates
(J band luminescence obsd. with excitation below band-gap energy on ***cyanine*** dye J aggregate)
IT Luminescence
(laser-induced; J band luminescence obsd. with excitation below band-gap energy on ***cyanine*** dye J aggregate)
IT UV and visible spectra
(of ***cyanine*** dye J aggregate)
IT 28272-54-0
RL: PRP (Properties)
(J band luminescence obsd. with excitation below band-gap energy on ***cyanine*** dye J aggregate)
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Misawa, K; Nonlinear Opt 1995, V14, P103 CAPLUS

L5 ANSWER 30 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:390863 CAPLUS
DN 138:386856
ED Entered STN: 22 May 2003
TI ***Two*** - ***photon*** absorption materials based on dithienothiophene
IN Kim, Oh-Kil; Woo, Han Young; Kim, Kie-Soo; Lee, Kwang-Sup
PA The United States of America as Represented by the Secretary of the Navy, USA
SO U.S., 8 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM C07D413-10

ICS C07D413-14
INCL 548145000; 548444000; 549031000
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 27, 28
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6566529	B1	20030520	US 2000-574256	20000519
PRAI	US 2000-574256		20000519		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6566529	ICM	C07D413-10
	ICS	C07D413-14
	INCL	548145000; 548444000; 549031000
	IPCI	C07D0413-10 [ICM,7]; C07D0413-14 [ICS,7]
	IPCR	C07D0495-00 [I,C]; C07D0495-14 [I,A]
	NCL	548/145.000; 548/444.000; 549/031.000
	ECLA	C07D495/14+333B+333B+333B+3

OS MARPAT 138:386856
AB This invention pertains to ***two*** - ***photon*** -absorbing dithieno[3,2-b:2',3'-d]thiophene-based compds. contg. electron donors and/or electron acceptors and having cross section value .sigma. that is higher than the fluorene-based compd. AF-50. Synthesis examples were given which started with dithieno[3,2-b:2',3'-d]thiophene-2,6-dicarboxaldehyde and various amines.
ST dithienothiophene based ***two*** ***photon*** absorber prodn
IT ***Two*** - ***photon*** absorption
(nonlinear; prodn. of ***two*** - ***photon*** absorption materials based on dithienothiophene)
IT ***Cyanine*** dyes
(orange; prodn. of ***two*** - ***photon*** absorption materials based on dithienothiophene)
IT Nonlinear optical materials
(prodn. of ***two*** - ***photon*** absorption materials based on dithienothiophene)
IT Nonlinear optical absorption
(***two*** - ***photon*** ; prodn. of ***two*** - ***photon*** absorption materials based on dithienothiophene)
IT 402962-01-0P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prodn. of ***two*** - ***photon*** absorption materials based on dithienothiophene)
IT 261163-34-2P 261163-35-3P 261163-36-4P 261163-37-5P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(orange dye; prodn. of ***two*** - ***photon*** absorption materials based on dithienothiophene)
IT 67061-73-8, Dithieno[3,2-b:2',3'-d]thiophene-2,6-dicarboxaldehyde 183994-95-8 253878-39-6 263720-99-6 402962-03-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prodn. of ***two*** - ***photon*** absorption materials based on dithienothiophene)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Kim; Chem Mater 2000, V12(2), P284 CAPLUS
(2) Kim; Polym Prepr 2000, V41(1), P795 CAPLUS
(3) Kim; Polym Prepr 2000, V41(1), P800 CAPLUS

L5 ANSWER 31 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:877211 CAPLUS
DN 141:158506
ED Entered STN: 10 Nov 2003
TI Synthesis and ***two*** - ***photon*** absorption of highly soluble three-branched fluorenylene-vinylene derivatives. [Erratum to document cited in CA140:028624]
AU Mongin, Olivier; Porres, Laurent; Katan, Claudine; Pons, Thomas; Mertz, Jerome; Blanchard-Desce, Mireille
CS Institut de Chimie, Synthese et ElectroSynthese Organiques (CNRS, UMR 6510), Universite de Rennes 1, Rennes, F-35042, Fr.

SO Tetrahedron Letters (2003), 44(50), 9065
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science B.V.
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 25
AB The cor. version of Table 1 is given.
ST erratum fluorenylenevinylene dye prepn fluorescence ***two*** ***photon*** absorption
IT Fluorescence
Two - ***photon*** absorption
(of highly sol. three-branched fluorenylene-vinylene dyes (Erratum))
IT ***Cyanine*** dyes
(prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes (Erratum))
IT 634191-18-7P 634191-22-3P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes (Erratum))
IT 100693-36-5P 245653-28-5P 263242-49-5P 480997-58-8P 634191-15-4P 634191-16-5P 634191-17-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes (Erratum))
IT 122-52-1 2065-66-9 2591-86-8, 1-Piperidinecarboxaldehyde 4181-20-8 7726-95-6, Bromine, reactions 119001-43-3 140191-31-7 249514-82-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes (Erratum))

L5 ANSWER 32 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:795017 CAPLUS
DN 140:28624
ED Entered STN: 10 Oct 2003
TI Synthesis and ***two*** - ***photon*** absorption of highly soluble three-branched fluorenylene-vinylene derivatives
AU Mongin, Olivier; Porres, Laurent; Katan, Claudine; Pons, Thomas; Mertz, Jerome; Blanchard-Desce, Mireille
CS Institut de Chimie, Synthese et ElectroSynthese Organiques (CNRS, UMR 6510), Universite de Rennes 1, Rennes, F-35042, Fr.
SO Tetrahedron Letters (2003), 44(44), 8121-8125
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science B.V.
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 25, 73
OS CASREACT 140:28624
AB Two new three-branched fluorenylene-vinylene derivs. were synthesized by triple Heck-type or Horner-Wadsworth-Emmons reactions. Their one-photon absorption and fluorescence as well as their ***two*** - ***photon*** absorption properties are reported. These dyes, which combine very high soly. in org. solvents, high fluorescence quantum yield, and giant ***two*** - ***photon*** absorption cross-sections in the red-NIR region (up to 3660 GM, in the femtosecond regime) are promising candidates for both optical power limiting applications and ***two*** - ***photon*** laser scanning microscopy.
ST fluorenylenevinylene dye prepn fluorescence ***two*** ***photon*** absorption
IT Fluorescence
Two - ***photon*** absorption
(of highly sol. three-branched fluorenylene-vinylene dyes)
IT ***Cyanine*** dyes
(prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes)
IT 634191-18-7P 634191-22-3P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes)

IT 100693-36-5P 245653-28-5P 263242-49-5P 480997-58-8P 634191-15-4P 634191-16-5P 634191-17-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes)

IT 122-52-1, Triethyl phosphite 2065-66-9, Methyltriphenylphosphonium iodide 2591-86-8, N-Formylpiperidine 4181-20-8, Tris(4-iodophenyl)amine 7726-95-6, Bromine, reactions 119001-43-3, Tris(4-formylphenyl)amine 140191-31-7 249514-82-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and ***two*** - ***photon*** absorption of highly sol. three-branched fluorenylene-vinylene dyes)

RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L5 ANSWER 33 OF 92 CAPLUS
AN 2003:266425 CAPLUS
DN 138:403071
ED Entered STN: 08 Apr 2003

TI Lateral diffusion dynamics for single molecules of fluorescent ***cyanine*** dye at the free and surfactant-modified dodecane-water interface

AU Hashimoto, Fumi; Tsukahara, Satoshi; Watarai, Hitoshi
CS Department of Chemistry, Graduate School of Science, Osaka University, Toyonaka, Osaka, 560-0043, Japan

SO Langmuir (2003), 19(10), 4197-4204
CODEN: LANGD5; ISSN: 0743-7463
PB American Chemical Society
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 46, 73

AB The present study proposed a single mol. probing of transport properties of the nanoregion of liq.-liq. interfaces. Fluorescence from single mols. of 1,1'-dioctadecyl-3,3,3',3'-tetramethylindocarbocyanine perchlorate (DiI) adsorbed at a dodecane-water interface was detected in the absence and presence of an anionic or zwitterionic surfactant by total internal reflection fluorescence microscopy with a single photon counting device. Intermittent photon bundles from single DiI mols. were obsd. in time-resolved photon counting measurements, when the av. no. of interfacial DiI mols. was less than 1 in the observation area (830 nm in diam.). Photon signals emitted by the same DiI mol. in the observation area were discriminated with the time interval between ***two*** ***photon*** signals. The lateral diffusion coeff. of single DiI mols. was obtained from the max. duration of the photon bundle, the interfacial viscosity was obtained from the diffusion coeff. of the single DiI mols., and the fluorescence quantum yield of single DiI mols. was obtained from the d. of the photon bundles. The adsorption of surfactant at the interface reduced the lateral diffusion coeff. of single DiI mols. by an increase in the interfacial viscosity.

ST fluorescent ***cyanine*** dye diffusion water dodecane interface

IT Surfactants
(anionic; effect on diffusion dynamics for single mols. of fluorescent ***cyanine*** dye at water-dodecane interface)

IT Interface
(dodecane-water; diffusion dynamics for single mols. of fluorescent ***cyanine*** dye at)

IT Autocorrelation function
Fluorescence
(in diffusion dynamics for single mols. of ***cyanine*** dye at modified dodecane-water interface)

IT Viscosity
(interfacial; in diffusion dynamics for single mols. of ***cyanine*** dye at modified dodecane-water interface)

IT Diffusion
(of single mols. of fluorescent ***cyanine*** dye at dodecane-water interface)

IT Surfactants
(zwitterionic; effect on diffusion dynamics for single mols. of fluorescent ***cyanine*** dye at water-dodecane interface)

IT 112-40-3, Dodecane
RL: NUU (Other use, unclassified); USES (Uses)
(diffusion dynamics for single mols. of fluorescent ***cyanine*** dye at dodecane-water interface)

IT 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(diffusion dynamics for single mols. of fluorescent ***cyanine*** dye at water-dodecane interface)

IT 41085-99-8, 1,1'-Dioctadecyl-3,3,3',3'-tetramethylindocarbocyanine perchlorate
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(dye; diffusion dynamics for single mols. of fluorescent ***cyanine*** dye at dodecane-water interface)

IT 151-21-3, Sodium dodecyl sulfate, uses 18194-24-6, Dimyristoylphosphatidylcholine
RL: TEM (Technical or engineered material use); USES (Uses)
(effect on diffusion dynamics for single mols. of fluorescent ***cyanine*** dye at water-dodecane interface)

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L5 ANSWER 34 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:623211 CAPLUS
DN 140:17585
ED Entered STN: 14 Aug 2003
TI Novel heteroaromatic-based ***multi*** -branched dyes with enhanced ***two*** - ***photon*** absorption activity
AU Abbotto, Alessandro; Beverina, Luca; Bozio, Renato; Facchetti, Antonio; Ferrante, Camilla; Pagani, Giorgio A.; Pedron, Danilo; Signorini, Raffaella
CS Department of Materials Science and INSTM, University of Milano-Bicocca, Milan, I-21025, Italy
SO Chemical Communications (Cambridge, United Kingdom) (2003), (17), 2144-2145
CODEN: CHCOFS; ISSN: 1359-7345
PB Royal Society of Chemistry
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 27, 73
OS CASREACT 140:17585
AB The first examples of heterocycle-based ***multi*** -branched dyes with efficient ***two*** - ***photon*** absorption (TPA) activity are reported; the novel chromophores exhibit large TPA cross sections (as high as 1600 .times. 10-50 cm4 s photon-1 mol.-1, measured with 150 fs laser pulses at 800 nm); a strong cooperative enhancement in the branched systems with respect to the one-dimensional sub-units is found.
ST dye prepn ***two*** ***photon*** absorption
IT ***Cyanine*** dyes
(cationic; prepn. of heteroarom.-based ***multi*** -branched dyes with enhanced ***two*** - ***photon*** absorption activity)
IT ***Two*** - ***photon*** absorption

(prepn. of heteroarom.-based ***multi*** -branched dyes with enhanced ***two*** - ***photon*** absorption activity)

IT Laser induced fluorescence
(***two*** - ***photon*** ; of heteroarom.-based ***multi*** -branched dyes with enhanced ***two*** - ***photon*** absorption activity)

IT 618439-14-8P 630390-32-8P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn. of heteroarom.-based ***multi*** -branched dyes with enhanced ***two*** - ***photon*** absorption activity)

IT 1192-58-1, 1-Methyl-2-pyrrolecarboxaldehyde 220260-65-1 630390-33-9 630390-35-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. of heteroarom.-based ***multi*** -branched dyes with enhanced ***two*** - ***photon*** absorption activity)

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L5 ANSWER 35 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:105596 CAPLUS
DN 141:372628
ED Entered STN: 10 Feb 2004
TI Studies of intramolecular processes stimulated by intense optical radiation

AU Razumova, T. K.
CS S. I. Vavilov State Optical Institute, St. Petersburg, Russia

SO Journal of Optical Technology (Translation of Opticheskii Zhurnal) (2003), 70(12), 844-847
CODEN: JOTEE4; ISSN: 1070-9762
PB Optical Society of America
DT Journal; General Review
LA English

CC 74-0 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 22, 73

AB A review is presented of papers devoted to studies of the photophys. and photochem. processes that appear when powerful resonance optical excitation acts in solns. of polyat. compds. of ***polymethine*** and pyrylium classes and in mol. layers. The processes that have been studied include intramol. localization of excitation energy, one- and two-step photostereoisomerization of ***polymethine*** dyes, structural rearrangement of a pyrylium-mol.-solvate complex, generation of stimulated emission by unstable photoisomers, induced bleaching in an inhomogeneously broadened medium, stepped transitions with absorption, induced anisotropy of absorption and induced birefringence, ***two*** - ***photon*** absorption, and photostimulated transformation of the components of a mol. layer.

ST review photophys photochem optical excitation ***polymethine***

pyrylium compd
IT Rearrangement
(photochem.; photophys. and photochem. induced by powerful resonance optical excitation in ***polymethine*** and pyrylium derivs.)
IT Isomerization
(photoisomerization, stereoselective; photophys. and photochem. induced by powerful resonance optical excitation in ***polymethine*** and pyrylium derivs.)
IT Birefringence
Cyanine dyes
Electronic excitation
Electronic transition
Lasers
Photochemistry
Photoexcitation
Stimulated emission
Two - ***photon*** absorption
(photophys. and photochem. induced by powerful resonance optical excitation in ***polymethine*** and pyrylium derivs.)
IT Onium compounds
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
(pyrylium; photophys. and photochem. induced by powerful resonance optical excitation in ***polymethine*** and pyrylium derivs.)
RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L5 ANSWER 36 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:915207 CAPLUS
DN 140:237119
ED Entered STN: 24 Nov 2003
TI Syntheses of novel asymmetric cyclopentanone dyes and measurement of ***two*** - ***photon*** absorption cross-section
AU Wang, Tao; Wu, Fei-peng; Shi, Meng-quan; Guo, Heng-chang; Wu, Cheng-yin; Jiang, Hong-bing; Gong, Qi-huang
CS Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, Beijing, 100101, Peop. Rep. China
SO Chemical Research in Chinese Universities (2003), 19(4), 470-473
CODEN: CRCUED; ISSN: 1005-9040
PB Higher Education Press
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 25, 73
OS CASREACT 140:237119
AB A simple synthesis route with a high yield of novel asym. dibenzylidenecyclopentanone dyes and their highly ***two*** - ***photon*** up-converted fluorescences are reported. The dyes have good solubilities in most of ordinary solvents, a wide UV absorption wavelength range from 380-540 nm, and high fluorescence quantum yields. The ***two*** - ***photon*** absorption cross-sections of the dyes were measured in chloroform by a ***two*** - ***photon*** induced fluorescence method. All of these properties of the dyes make them suitable for use as ***two*** - ***photon*** fluorescent probes.
ST cyclopentanone dibenzylidene deriv dye prepn ***two*** ***photon*** fluorescence
IT Fluorescent dyes
(***cyanine*** ; prepn. and ***two*** - ***photon*** fluorescence of dibenzylidenecyclopentanone dyes)
IT ***Cyanine*** dyes
(fluorescent; prepn. and ***two*** - ***photon*** fluorescence of dibenzylidenecyclopentanone dyes)
IT Fluorescence up-conversion
Two - ***photon*** absorption
UV and visible spectra
(of dibenzylidenecyclopentanone dyes)
IT Fluorescent indicators
(prepn. and ***two*** - ***photon*** fluorescence of dibenzylidenecyclopentanone dyes for)
IT Laser induced fluorescence
(***two*** - ***photon*** ; of dibenzylidenecyclopentanone dyes)
IT 67805-13-4
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(intermediate; prepn. and ***two*** - ***photon*** fluorescence of dibenzylidenecyclopentanone dyes)
IT 667917-06-8P 667917-07-9P 667917-08-0P 667917-09-1P 667917-10-4P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. and ***two*** - ***photon*** fluorescence of dibenzylidenecyclopentanone dyes)
IT 100-10-7, 4-(Dimethylamino)benzaldehyde 105-07-7, p-Cyanobenzaldehyde 120-92-3, Cyclopentanone
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and ***two*** - ***photon*** fluorescence of dibenzylidenecyclopentanone dyes)
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 37 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:625642 CAPLUS
DN 140:21014
ED Entered STN: 14 Aug 2003
TI Photon statistics of a single photon source
AU Treussart, F.; Alleaume, R.; Le Floc'h, V.; Xiao, L. T.; Roch, J.-F.; Courty, J.-M.
CS Laboratoire de Photonique Quantique et Moleculaire, ENS Cachan, Cachan, 94235, Fr.
SO NATO Science Series, II: Mathematics, Physics and Chemistry (2003), 100(Organic Nanophotonics), 413-422
CODEN: NSSICD
PB Kluwer Academic Publishers
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB We report on the realization of a single photon source relying on the pulsed excitation of a single org. mol. at room temp., and the study of its intensity fluctuations over 4 orders of magnitude of the observation time scale. On time scale of a few excitation periods, sub-poissonian statistics is clearly obsd. and the probability of ***multiphoton*** events is 10 times smaller than for equiv. Poissonian pulses. An excess of noise appears on longer timescale, due to the blinking produced by the mol. triplet state.
ST photon statistic single photon source
IT ***Cyanine*** dyes
Energy level excitation
Fluorescence
Light sources
Noise
Photodiodes
Photon
Statistical analysis
(photon statistics of a single photon source)
IT Organic compounds, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(photon statistics of a single photon source)
IT 9011-14-7, Polymethylmethacrylate 41085-99-8, 1,1'-Dioctadecyl-3,3,3',3'-tetramethylindocarbocyanine perchlorate
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(photon statistics of a single photon source)
RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 38 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:632310 CAPLUS
DN 140:101505
ED Entered STN: 15 Aug 2003
TI Femtosecond ***two*** - ***photon*** absorptivities of a thiacyanine dye for optical limiting applications
AU Huey, LaQuieta; Bonner, Carl E., Jr.
CS Center for Materials Research, Norfolk State Univ., Norfolk, VA, 23504, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (2003), 4991(Organic Photonic Materials and Devices V), 204-211
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22
AB The intensity dependent index of refraction and the mol. ***two*** - ***photon*** absorptivity (TPA) of 3,3'-diethylthiacyanine iodide (DETCI) was measured in a range of solvents by the femtosecond z-scan technique. In DMSO, where DETCI is quite sol., both the ***two*** ***photon*** absorptivity and the nonlinear index of refraction are linear functions of concn. In contrast, the ***two*** ***photon*** absorptivity and nonlinear index change of DETCI in MeOH is an order of magnitude lower and shows signs of satn. at concns. well below the satn. limit. In high index solvents such as MeOH, the TPA of DETCI is much smaller in lower index solvents such as DMSO. The intensity dependent index change, n2 is large and relatively insensitive to the index of the solvent.
ST ***two*** ***photon*** absorption thiacyanine dye optical limiting
IT ***Cyanine*** dyes
Nonlinear optical properties
Optical limiting
Refractive index
Solvent effect
Two - ***photon*** absorption
UV and visible spectra
(***two*** - ***photon*** absorptivities of thiacyanine dye for optical limiting applications)
IT 67-56-1, Methanol, properties 67-68-5, DMSO, properties
RL: PRP (Properties)
(solvent effect; ***two*** - ***photon*** absorptivities of thiacyanine dye for optical limiting applications)
IT 2197-01-5, 3,3'-Diethylthia- ***cyanine*** iodide
RL: PRP (Properties)
(***two*** - ***photon*** absorptivities of thiacyanine dye for optical limiting applications)
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
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nonlinear optical materials and physics of low-dimensional structures 1998, P261
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L5 ANSWER 39 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:122514 CAPLUS
DN 139:242404
ED Entered STN: 18 Feb 2003
TI A monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells
AU Ohulchanskyy, Tymish Y.; Pudavar, Haridas E.; Yarmoluk, Sergiy M.; Yashchuk, Valeriy M.; Bergey, Earl J.; Prasad, Paras N.
CS Department of Chemistry, Institute for Lasers, Photonics and Biophotonics, State University of New York at Buffalo, Buffalo, NY, 14260, USA
SO Photochemistry and Photobiology (2003), 77(2), 138-145
CODEN: PHCBAP; ISSN: 0031-8655
PB American Society for Photobiology
DT Journal
LA English
CC 9-4 (Biochemical Methods)
Section cross-reference(s): 3, 13
AB Monomethine ***cyanine*** dye 4-((1-methylbenzothiazolylliliden-2)methyl) -1,2,6-trimethylpyridinium perchlorate (Cyan 40) was investigated as a ***two*** - ***photon*** -excited fluorescence probe for nucleic acids (NA). Cyan 40 has been shown to demonstrate efficient ***two*** - ***photon*** -excited fluorescence in the presence of NA in vitro in contrast to solns. without NA. ***Two*** - ***photon*** confocal laser scanning microscopy (TPCLSM) and ***two*** - ***photon*** laser scanning microspectro-fluorometry were used to check the possibility of using Cyan 40 as ***two*** - ***photon*** -excited fluorescence label for NA in living cells. Study of dye effect on viability of cells was also carried out. We ascertained that Cyan 40 is a cell-permeant dye, manifesting efficient ***two*** - ***photon*** -excited fluorescence when bound to NA in living cells, without any significant influence on viability of cells. TPCLSM images obtained from stained cells indicate preferential RNA staining by Cyan 40 compared with DNA.
ST cyan40 RNA DNA staining living cell confocal microscopy fluorometry
IT DNA
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(DNA staining in living cells; monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
IT Confocal laser scanning microscopy
(TPCLSM (***two*** - ***photon*** confocal laser scanning microscopy); monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
IT Fluorometry
(laser scanning microspectro-fluorometry; monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
IT Imaging
Staining, biological
(monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
IT Kidney
(nucleic acid staining in cells of; monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence

detection of nucleic acids and their visualization in live cells)
IT RNA
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(preferential RNA staining in living cells; monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
IT Carcinoma
(squamous cell, nucleic acid staining in; monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
IT Human
(use of human cells; monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
IT 98251-90-2, Cyan 40
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(monomethine ***cyanine*** dye cyan 40 for ***two*** - ***photon*** -excited fluorescence detection of nucleic acids and their visualization in live cells)
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 40 OF 92 INSPEC (C) 2006 IEE on STN
AN 2003:7812092 INSPEC DN A2004-03-8250-001
TI Studies of intramolecular processes stimulated by intense optical radiation.

AU Razumova, T.K. (S. I. Vavilov State Opt. Inst., St. Petersburg, Russia)

SO Journal of Optical Technology p.844-7. 27 refs.
Doc. No.: S1070-9762(03)00412-3
Published by: Opt. Soc. America
Price: CCCC 1070-9762/2003/120844-04$20.00

CODEN: JOTEE4 ISSN: 1070-9762
Translation of: Optiko-Mekhanicheskaya Promyshlennost (Dec. 2003) vol.70, no.12, p.15-19. 27 refs.
CODEN: OPMPAQ ISSN: 0030-4042
SICI: 0030-4042(200312)70:12L.15;1-5
DT Journal; Translation Abstracted
TC General Review
CY Russian Federation; United States
LA English
AB A review is presented of papers devoted to studies of the photophysical and photochemical processes that appear when powerful resonance optical excitation acts in solutions of polyatomic compounds of ***polymethine*** and pyrilium classes and in molecular layers. The processes that have been studied include intramolecular localization of excitation energy, one- and two-step photostereoisomerization of ***polymethine*** dyes, structural rearrangement of a pyrilium-molecule-solvate complex, generation of stimulated emission by unstable photoisomers, induced bleaching in an inhomogeneously broadened medium, stepped transitions with absorption, induced anisotropy of absorption and induced birefringence, ***two*** - ***photon*** absorption, and photostimulated transformation of the components of a molecular layer.
CC A8250 Photochemistry and radiation chemistry; A0130R Reviews and tutorial papers; resource letters; A8230Q Isomerization and rearrangement; A3380B Molecular level crossing, optical pumping, population inversion, stimulated emission; A3380K Multiphoton processes in molecules; A4265G Optical transient phenomena, self-induced transparency, optical saturation and related effects
CT BIREFRINGENCE; DYES; ISOMERISATION; OPTICAL SATURABLE ABSORPTION; ORGANIC COMPOUNDS; PHOTOCHEMISTRY; REVIEWS; STIMULATED EMISSION; ***TWO*** - ***PHOTON*** PROCESSES
ST intramolecular processes; intense optical radiation; review; photophysical processes; photochemical processes; powerful resonance optical excitation; polyatomic compounds; solutions; ***polymethine classes*** ; pyrilium classes; molecular layers; intramolecular localization; excitation energy; two-step photostereoisomerization; one-step photostereoisomerization; ***polymethine dyes*** ; structural rearrangement; pyrilium-molecule-solvate complex; stimulated emission; unstable photoisomers; induced bleaching; inhomogeneously broadened medium; stepped transitions; absorption; induced anisotropy; induced birefringence; ***two-photon*** *** absorption*** ; photostimulated transformation

L5 ANSWER 41 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3
AN 2003:970742 CAPLUS
DN 141:78938
ED Entered STN: 12 Dec 2003
TI Femtosecond ***two*** - ***photon*** absorptivities of a thiacyanine dye for optical limiting applications
AU Huey, LaQuieta F.; Bonner, Carl E., Jr.
CS Center for Materials Research, Norfolk State Univ., Norfolk, VA, 23504, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (2003), 5212(Linear and Nonlinear Optics of Organic Materials III), 1-6
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22
AB The intensity dependent index of refraction and the mol. ***two*** - ***photon*** absorptivity (TPA) of 3,3'-diethylthiacyanine iodide (DETCI) was measured in a range of solvents by the femtosecond z-scan technique. In DMSO, where DETCI is quite sol., both the ***two*** - ***photon*** absorptivity and the nonlinear index of refraction are linear functions of concn. In contrast, the ***two*** ***photon*** absorptivity and nonlinear index change of DETCI in MeOH is an order of magnitude lower and shows signs of satn. at concns. well below the satn. limit. In high index solvents such as MeOH, the TPA of DETCI is much smaller in lower index solvents such as DMSO. The intensity dependent index change, n2 is large and relatively insensitive to the index of the solvent.

ST ***two*** ***photon*** absorption thiacyanine dye optical limiting
IT ***Cyanine*** dyes
Nonlinear optical properties
Optical limiting
Refractive index
Solvent effect
Two - ***photon*** absorption
(***two*** - ***photon*** absorptivities of thiacyanine dye for optical limiting applications)
IT 67-56-1, Methanol, properties 67-68-5, DMSO, properties
RL: PRP (Properties)
(solvent effect; ***two*** - ***photon*** absorptivities of thiacyanine dye for optical limiting applications)
IT 2197-01-5, 3,3'-Diethylthiacyanine iodide
RL: PRP (Properties)
(***two*** - ***photon*** absorptivities of thiacyanine dye for optical limiting applications)
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 42 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:159666 CAPLUS
DN 136:392933
ED Entered STN: 05 Mar 2002
TI Direct measurement of the photon statistics of a triggered single photon source
AU Treussart, F.; Alleaume, R.; Le Floc'h, V.; Xiao, L. T.; Courty, J.-M.; Roch, J.-F.
CS Lab. Photonique Quantique et Moleculaire, ENS Cachan, Cachan, 94235, Fr.
SO Los Alamos National Laboratory, Preprint Archive, Quantum Physics (2002) 1-4, arXiv:quant-ph/0202130, 22 Feb 2002
CODEN: LNQPF4
URL: http://xxx.lanl.gov/ps/quant-ph/0202130
PB Los Alamos National Laboratory
DT Preprint
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The authors studied intensity fluctuations of a single photon source relying on the pulsed excitation of the fluorescence of a single mol. at room temp. The authors directly measured the Mandel parameter Q(T) over 4 orders of magnitude of observation timescale T, by recording every photocount. On timescale of a few excitation periods, subpoissonian statistics is clearly obsd. and the probability of ***two*** - ***photons*** events is 10 times smaller than Poissonian pulses. On longer times, blinking in the fluorescence, due to the mol. triplet state, produces an excess of noise.
ST photon statistics triggered single photon source
IT ***Cyanine*** dyes
Fluorescence
Statistical analysis
(direct measurement of photon statistics of a triggered single photon source)
IT Photon
(source for; direct measurement of photon statistics of a triggered single photon source)
IT 63-89-8
RL: PRP (Properties)
(direct measurement of photon statistics of a triggered single photon source)
IT 9011-14-7, PMMA

RL: NUU (Other use, unclassified); USES (Uses)
(matrix; direct measurement of photon statistics of a triggered single photon source)

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L5 ANSWER 43 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2002:696463 CAPLUS
DN 137:206638
ED Entered STN: 13 Sep 2002

TI Use of photoluminescent nanoparticles for photodynamic therapy

IN Chen, James
PA USA

SO U.S. Pat. Appl. Publ., 25 pp.
CODEN: USXXCO
DT Patent
LA English
IC ICM A61K039-395
ICS A61K009-50
INCL 424130100
CC 63-8 (Pharmaceuticals)
Section cross-reference(s): 8
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002127224	A1	20020912	US 2002-91144	20020304
PRAI US 2001-272877P	P	20010302		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2002127224	ICM	A61K039-395
	ICS	A61K009-50
	INCL	424130100
	IPCI	A61K0039-395 [ICM,7]; A61K0009-50 [ICS,7]
	IPCR	A61K0039-44 [I,A]; A61K0039-44 [I,C]; A61K0041-00 [I,A]; A61K0041-00 [I,C]
	NCL	424/130.100
	ECLA	A61K039/44

AB Disclosed are compns. and methods that can be used to effect a photodynamic therapy (PDT) such as cancer treatment or gene transcription. Compns. include light-emitting nanoparticles that absorb light of one wavelength emitted by a light source and emit light of another wavelength that activates a PDT drug. Light-emitting nanoparticles include quantum dots, nanocrystals, and quantum rods as well as mixts. of these nanoparticles. The nanoparticles may be delivered to a patient in a liq. carrier or as part of a solid carrier such as a biocompatible polymeric film, a polymeric sheath, or other carrier suitable for introduction at the site to be treated. In one embodiment of the invention,

light-emitting nanoparticles are localized at the treatment site by either joining them to the PDT drug covalently or non-covalently through linkage groups such as biotin/avidin, or the nanoparticles are localized at the treatment site by attaching the nanoparticles to a linkage group that has affinity for e.g. cells or proteins produced at the site to the treated. A sufficient no. of light-emitting nanoparticles are delivered to the treatment site to activate the PDT drug and effect treatment.

ST photoluminescent nanoparticle photodynamic therapy

IT Polymers, biological studies
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(biodegradable; photoluminescent nanoparticles and other components for photodynamic therapy)

IT Antibodies and Immunoglobulins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(fragments; photoluminescent nanoparticles for photodynamic therapy)

IT Drug delivery systems
(injections, s.c.; photoluminescent nanoparticles and other components for photodynamic therapy)

IT Lenses
(internal reflection; photoluminescent nanoparticles and other components for photodynamic therapy)

IT Drug delivery systems
(liposomes; photoluminescent nanoparticles and other components for photodynamic therapy)

IT Drug delivery systems
(nanocapsules; photoluminescent nanoparticles and other components for photodynamic therapy)

IT Drug delivery systems
(nanoparticles; photoluminescent nanoparticles for photodynamic therapy)

IT Electroluminescent devices
Films
Illumination
Lasers
Optical fibers
Quantum dot devices
Semiconductor lasers
Test kits
(photoluminescent nanoparticles and other components for photodynamic therapy)

IT ***Cyanine*** dyes
Drug delivery systems
Fluorescence
Human
Luminescence
Photodynamic therapy
Photosensitizers, pharmaceutical
Two - ***photon*** absorption
(photoluminescent nanoparticles for photodynamic therapy)

IT Antigens
Avidins
Chemokine receptors
Growth factor receptors
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(photoluminescent nanoparticles for photodynamic therapy)

IT Polymers, biological studies
RL: MOA (Modifier or additive use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photoluminescent nanoparticles for photodynamic therapy)

IT Antibodies and Immunoglobulins
Chemokines
Growth factors, animal
Porphyrins
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photoluminescent nanoparticles for photodynamic therapy)

IT Antitumor agents
Transcription, genetic
(photoluminescent nanoparticles for photodynamic therapy such as cancer treatment or gene transcription)

IT 13463-67-7, Titanium dioxide, biological studies
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological

study); USES (Uses)
(photoluminescent nanoparticles and other components for photodynamic therapy)

IT 26023-30-3, Poly[oxy(1-methyl-2-oxo-1,2-ethanediyl)] 26680-10-4, Polylactide
RL: MOA (Modifier or additive use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photoluminescent nanoparticles and other components for photodynamic therapy)

IT 9013-20-1, Streptavidin
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(photoluminescent nanoparticles for photodynamic therapy)

IT 58-85-5, Biotin 61-73-4, Methylene blue 66-97-7D, Psoralen, derivs. 106-60-5, .delta.-Aminolevulinic acid 106-60-5D, Aminolevulinic acid, derivs. 553-12-8, Protoporphyrin 574-93-6D, Phthalocyanine, derivs. 2683-78-5D, Bacteriochlorin, derivs. 2683-84-3D, Chlorin, derivs. 3599-32-4, Indocyanine green 14459-29-1D, Hematoporphyrin, derivs. 15664-29-6D, Pheophorbide a, derivs. 24533-72-0D, Pyropheophorbide a, derivs. 37251-80-2, Toluidine blue 68335-15-9D, Hematoporphyrin D, derivs. 73590-58-6, Omeprazole 87806-31-3, Porfimer sodium 105156-22-7D, DHE, derivs. 107634-79-7D, EtioPurpurin, derivs. 110230-98-3D, Mono-L-aspartyl chlorin e6, derivs. 129497-78-5, Verteporfin 129497-78-5D, Verteporfin, derivs. 189752-49-6D, Texaphyrin, derivs.
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(photoluminescent nanoparticles for photodynamic therapy)

L5 ANSWER 44 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:101709 CAPLUS
DN 136:280777
ED Entered STN: 07 Feb 2002
TI Synthesis and photophysical properties of new conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence
AU Mongin, Olivier; Porres, Laurent; Moreaux, Laurent; Mertz, Jerome; Blanchard-Desce, Mireille
CS Synthese et ElectroSynthese Organiques, CNRS UMR 6510 Universite de Rennes 1, Rennes, F-35042, Fr.
SO Organic Letters (2002), 4(5), 719-722
CODEN: ORLEF7; ISSN: 1523-7060
PB American Chemical Society
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 9, 25, 73
OS CASREACT 136:280777
AB Six new elongated arom. acetylenic push-push fluorophores were synthesized by 2-fold Sonogashira or Wittig-Horner reactions. Modulation of the length and topol. of the conjugated connectors allows tuning of their photophys. properties. In addn., their photoluminescence can be adjusted by playing on polarity. Derivs. combining enhanced ***two*** - ***photon*** absorption cross section in the visible red and high fluorescence quantum yield have been obtained. Such fluorophores hold promise for nonlinear imaging of biol. systems.
ST arom acetylenic conjugated fluorophore prepn; ***two*** ***photon*** excited fluorescence arom acetylenic conjugated dye
IT Fluorescent dyes
(***cyanine*** ; prepn. and photophys. properties of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence)
IT ***Cyanine*** dyes
(fluorescent; prepn. and photophys. properties of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence)
IT ***Two*** - ***photon*** absorption
(of arom. acetylenic conjugated fluorophores)
IT Solvatochromism
(of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence)
IT Laser induced fluorescence
(prepn. and photophys. properties of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited

fluorescence)
IT Laser induced fluorescence
(***two*** - ***photon*** ; prepn. and photophys. properties of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence)
IT 406490-90-2P 406490-93-5P 406490-95-7P 406490-97-9P 406490-99-1P 406491-01-8P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fluorophore; prepn. and photophys. properties of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence)
IT 17919-34-5P 357219-50-2P 406491-04-1P 406491-06-3P 406491-09-6P 406491-11-0P 406491-13-2P 406491-17-6P 406491-19-8P 406491-21-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and photophys. properties of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence)
IT 115-19-5, 2-Methyl-3-butyn-2-ol 122-52-1, Triethyl phosphite 603-35-0, Triphenylphosphine, reactions 624-38-4, 1,4-Diiodobenzene 1122-91-4, 4-Bromobenzaldehyde 3007-75-8, N,N-Dioctylaniline 7553-56-2, Iodine, reactions 15164-44-0, 4-Iodobenzaldehyde 20248-86-6, 4,4'-Bis(bromomethyl)-1,1'-biphenyl 30525-89-4, Paraformaldehyde 38215-38-2, 4,4'-Diethynyl-1,1'-biphenyl 90134-09-1 140191-31-7
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and photophys. properties of arom. acetylenic conjugated fluorophores designed for ***two*** - ***photon*** -excited fluorescence)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
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(24) Xu, C; J Opt Soc Am B 1996, V13, P481 CAPLUS
(25) Xu, C; Proc Natl Acad Sci U S A 1996, V93, P10763 CAPLUS

L5 ANSWER 45 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:231352 CAPLUS
DN 137:64533
ED Entered STN: 27 Mar 2002
TI Study on ***two*** - ***photon*** properties of a new series of chromophores

AU Zhou, Yu-fang; Feng, Sheng-yu; Wang, Xiao-mei; Zhao, Xian; Jiang, Min-hu
CS Department of Physics, Shandong University, Jinan, 250100, Peop. Rep. China

SO Journal of Molecular Structure (2002), 609(1-3), 67-71
CODEN: JMOSB4; ISSN: 0022-2860
PB Elsevier Science B.V.
DT Journal
LA English

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic

Sensitizers)
Section cross-reference(s): 22, 73
OS CASREACT 137:64533
AB A new series of chromophores, styryl-quinolinium derivs. have been designed and synthesized. The linear absorption properties have been exptl. measured and the ***two*** - ***photon*** properties theor. investigated on the basis of a quantum-chem. INDO/CI and the sum-over-states method. The theor. prediction for this group of derivs. shows that they have large ***two*** - ***photon*** absorption cross sections as well as appropriate absorption wavelengths. The results show that the chromophores would be a kind of promising candidates of ***two*** - ***photon*** devices.
ST styrylquinolinium dye prepn ***two*** ***photon*** spectra MO
IT LUMO (molecular orbital)
(HOMO gap; in study on ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT CI (molecular orbital method)
INDO (molecular orbital method)
(INDO-CI; in study on ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT HOMO (molecular orbital)
(LUMO gap; in study on ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT ***Cyanine*** dyes
(cationic; prepn. and ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT IR spectra
Oscillator strength
(in study on ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT UV and visible spectra
(***two*** - ***photon*** ; in study on ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT 188547-27-5P 439659-65-1P 439659-66-2P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn. and ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT 16859-86-2P, 4,N-Dimethylquinolinium iodide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and ***two*** - ***photon*** properties of styryl quinolinium chromophores)
IT 74-88-4, Iodomethane, reactions 491-35-0, Lepidine 1201-91-8, 4-[N-(2-Hydroxyethyl)-N-methylamino]benzaldehyde 4181-05-9, 4-(Diphenylamino)benzaldehyde 51980-54-2, 4-Pyrrolidinobenzaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and ***two*** - ***photon*** properties of styryl quinolinium chromophores)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 46 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:482550 CAPLUS
DN 135:193230
ED Entered STN: 05 Jul 2001
TI Mechanisms by which intracellular calcium induces susceptibility to secretory phospholipase A2 in human erythrocytes
AU Smith, Samantha K.; Farnbach, Amelia R.; Harris, Faith M.; Hawes, Andrea C.; Jackson, Laurie R.; Judd, Allan M.; Vest, Rebekah S.; Sanchez, Susana; Bell, John D.

CS Department of Zoology, Brigham Young University, Provo, UT, 84602, USA
SO Journal of Biological Chemistry (2001), 276(25), 22732-22741
CODEN: JBCHA3; ISSN: 0021-9258
PB American Society for Biochemistry and Molecular Biology
DT Journal
LA English
CC 13-2 (Mammalian Biochemistry)
AB Exposure of human erythrocytes to the calcium ionophore ionomycin rendered them susceptible to the action of secretory phospholipase A2 (sPLA2). Anal. of erythrocyte phospholipid metab. by thin-layer chromatog. revealed significant hydrolysis of both phosphatidylcholine and phosphatidylethanolamine during incubation with ionomycin and sPLA2. Several possible mechanisms for the effect of ionomycin were considered. Involvement of intracellular phospholipases A2 was excluded since inhibitors of these enzymes had no effect. Assessment of membrane oxidn. by cis-parinaric acid fluorescence and comparison to the oxidants diamide and phenylhydrazine revealed that oxidn. does not participate in the effect of ionomycin. Incubation with ionomycin caused classical phys. changes to the erythrocyte membrane such as morphol. alterations (spherocytosis), translocation of aminophospholipids to the outer leaflet of the membrane, and release of microvesicles. Expts. with phenylhydrazine, KCl, quinine, ***merocyanine*** 540, the calpain inhibitor E-64d, and the scramblase inhibitor R5421 revealed that neither phospholipid translocation nor vesicle release was required to induce susceptibility. Results from fluorescence spectroscopy and ***two*** - ***photon*** excitation scanning microscopy using the membrane probe laurdan argued that susceptibility to sPLA2 is a consequence of increased order of membrane lipids.
ST calcium phospholipid secretory phospholipase A2 erythrocyte; membrane calcium phospholipid phospholipase A2
IT Membrane, biological
(bilayer; mechanisms by which intracellular calcium induces susceptibility to secretory phospholipase A2 in human erythrocytes)
IT Erythrocyte
(mechanisms by which intracellular calcium induces susceptibility to secretory phospholipase A2 in human erythrocytes)
IT Phosphatidylcholines, biological studies
Phosphatidylethanolamines, biological studies
Phospholipids, biological studies
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(mechanisms by which intracellular calcium induces susceptibility to secretory phospholipase A2 in human erythrocytes)
IT 7440-70-2, Calcium, biological studies 9001-84-7, Phospholipase A2
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(mechanisms by which intracellular calcium induces susceptibility to secretory phospholipase A2 in human erythrocytes)
IT 56092-81-0, Ionomycin
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(mechanisms by which intracellular calcium induces susceptibility to secretory phospholipase A2 in human erythrocytes)
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L5 ANSWER 47 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:670571 CAPLUS
DN 135:371833
ED Entered STN: 13 Sep 2001
TI Structure-property dependence of the first hyperpolarizabilities of organometallic ***merocyanines*** based on the .mu.-vinylcarbynediiron acceptor and ferrocene donor
AU Farrell, Tony; Manning, Anthony R.; Murphy, Timothy C.; Meyer-Friedrichsen, Timo; Heck, Jurgen; Asselberghs, Inge; Persoons, Andre
CS Department of Chemistry, University College Dublin, Dublin, 4, Ire.
SO European Journal of Inorganic Chemistry (2001), (9), 2365-2375
CODEN: EJICFO; ISSN: 1434-1948
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
CC 29-12 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 73, 75
AB In order to investigate the structure-property relationship of nonlinear optical materials, a series of organometallic chromophores were synthesized utilizing the [Fe2(.eta.-C5H5)2(CO)2(.mu.-CO)(.mu.-C-)]+ electron-accepting moiety and the ferrocenyl group, Fc, as the electron donor. The .pi.-linker between these two termini was systematically

modified and the mutual electronic communication between them was detd. using IR, NMR, and electronic absorption spectroscopy. An x-ray structure detn. of [Fe2(.eta.-C5H5)2(CO)2(.mu.-CO)(.mu.-C-CH:CH-CH:C(Cl)-Fc)][BF4] confirmed the strong electronic interaction between the donor and the acceptor with reduced .pi.-bridge bond-length alternation. The nonlinear optical properties of these complexes were examd. using the hyper Rayleigh scattering technique. The exptl. first hyperpolarizabilities are some of the highest obtained for ferrocenyl chromophores and, significantly, no enhancement was found due to ***two*** - ***photon*** absorption fluorescence. When polyene linkers -(CH:CH)n- are used, the values for .beta.0 increase with a ca. n1.5 dependence with no sign of satn. up to n = 4. However, the highest values for .beta. and .beta.o were obtained for linkers which contained an arom. ring as opposed to pure polyenes and in this respect a benzene ring was more effective than a thiophene or furan. Consequently, the higher .beta. and .beta.0 are not exhibited by those ***merocyanines*** with the highest values for .lambda.max. It is concluded for these compds. that a low excitation energy Eeg and a large transition moment M for the electronic excitation are less important than a large change in the dipole moment .DELTA..mu.eg. Furthermore, a chloro substituent on the olefinic double bond proximate to the ferrocenyl group has a dramatic effect on the .beta. and .beta.0 values.

ST hyperpolarizability ***merocyanine*** vinylcarbyne iron acceptor ferrocene donor; crystal mol structure alkenylcarbyne bridged iron dinuclear complex

IT Crystal structure
Molecular structure
(of alkenylcarbyne bridged cyclopentadienyliron dinuclear complex)

IT Dipole moment
Electronic excitation
Fluorescence
Nonlinear optical properties
Optical hyperpolarizability
Through-bond interaction
Two - ***photon*** absorption
UV and visible spectra
(prepn. and structure-property dependence of first hyperpolarizabilities of ***merocyanines*** based on bridged vinylcarbynediiron acceptor and ferrocene donor)

IT 12093-10-6, Ferrocenylcarboxaldehyde
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction with carbyne bridged cyclopentadienyliron dinuclear carbonyl complex)

IT 67378-10-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation reaction with ferrocenyl aldehydes)

IT 1291-51-6P 36222-48-7P 98243-45-9P 177912-64-0P 223134-46-1P 223134-48-3P 306763-14-4P 374588-34-8P 374588-35-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and condensation reaction with carbyne bridged cyclopentadienyliron dinuclear carbonyl complex)

IT 374588-37-1P 374588-39-3P 374588-41-7P 374588-43-9P 374588-45-1P 374588-47-3P 374588-49-5P 374588-51-9P 374588-55-3P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and structure-property dependence of first hyperpolarizabilities of ***merocyanines*** based on bridged vinylcarbynediiron acceptor and ferrocene donor)

IT 374588-53-1P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn., crystal structure, and structure-property dependence of first hyperpolarizabilities of ***merocyanines*** based on bridged vinylcarbynediiron acceptor and ferrocene donor)

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L5 ANSWER 48 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:576711 CAPLUS
DN 135:290144
ED Entered STN: 09 Aug 2001
TI Synthesis and properties of a new ***two*** - ***photon*** -absorbed material HEASPS
AU Wang, Chun; Yan, Ren; Shao, Zongshu; Xian, Zhao; Zhou, Guangyong; Fang Qi, Wang Dong; Jiang, Minhua
CS Institute of Crystal Materials and State Key Laboratory of Crystal Materials, Shandong University, Jinan, 250100, Peop. Rep. China
SO Physics and Chemistry of Liquids (2001), 39(4), 507-519
CODEN: PCLQAC; ISSN: 0031-9104
PB Gordon & Breach Science Publishers
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
OS CASREACT 135:290144
AB A new dye, trans-4-[p-[N-ethyl-N-(2-hydroxyethyl)amino]styryl]-N-methylpyridinium p-toluenesulfonate (HEASPS) was synthesized, and the ***two*** - ***photon*** absorption (TPA), TPA-induced frequency up-conversion emission, and ***two*** - ***photon*** pumped (TPP) frequency up-converted lasing properties of this new dye were exptl. studied. This new dye has a moderate TPA cross-section of .sigma.2 = 4.7 .times. 10-48 cm4.cntdot.s/photon at 1064 nm, but exhibits a high lasing efficiency. The net conversion efficiency from the absorbed 1064 nm pump pulse energy to the 626 nm up-converted lasing energy is 18.2% at the pump energy level of 1.9 mJ.
ST styryl cationic laser dye prepn ***two*** ***photon*** absorption
IT ***Cyanine*** dyes
(cationic; prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
IT Dyes
(laser; prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
IT ***Two*** - ***photon*** absorption
(nonlinear; prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
IT Fluorescence up-conversion
Optical up-conversion
Two - ***photon*** absorption
(prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
IT Laser induced fluorescence
Nonlinear optical absorption
UV and visible spectra
(***two*** - ***photon*** ; prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
IT 324077-31-8P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
IT 2301-80-6, 1,4-Dimethylpyridinium iodide 63619-28-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
IT 16836-95-6P, Silver p-toluenesulfonate
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(starting material; prepn. and properties of ***two*** - ***photon*** -absorbing laser dye)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 49 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:272828 CAPLUS
DN 135:76582
ED Entered STN: 18 Apr 2001
TI Several organic salts with high ***two*** - ***photon*** active
AU Tian, Yu-Peng; Yu, Wen-Tao; Fang, Qi; Jiang, Min-Hua; Wang, He-Zhou
CS Department of Chemistry, Anhui University, Hefei, 230039, Peop. Rep. China
SO Chinese Journal of Chemistry (2001), 19(4), 371-377
CODEN: CJOCEV; ISSN: 1001-604X
PB Science Press
DT Journal
LA English
CC 22-9 (Physical Organic Chemistry)
Section cross-reference(s): 41, 73, 75
AB Several org. salts with D-A mol. structure and different counterion were prepd. and exptl. studied. The ***two*** - ***photon*** induced frequency-upconverted spectra and ***two*** - ***photon*** pumped lasing are measured for the org. salt solns. in various solvents. The results indicate that counterions have influence on their stability and lasing property.
ST org salt ***two*** ***photon*** absorption crystallog
IT ***Cyanine*** dyes
(hemicyanine analog; several org. salts with high ***two*** - ***photon*** active)
IT Electron transfer
(intramol., twisted intramol. charge transfer; several org. salts with high ***two*** - ***photon*** active)
IT Dyes
(laser; several org. salts with high ***two*** - ***photon*** active)
IT Counterions
Crystal structure
Electron delocalization
Fluorescence
Lasers
Molecular structure
Nonlinear optical absorption
Optical pumping
Solvatochromism
Solvent effect
(several org. salts with high ***two*** - ***photon*** active)
IT Pyridinium compounds
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(several org. salts with high ***two*** - ***photon*** active)
IT 1201-91-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(conversion to laser dye; several org. salts with high ***two*** - ***photon*** active)
IT 2301-80-6P, 4-Methyl-N-methylpyridinium iodide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(conversion to laser dye; several org. salts with high ***two*** - ***photon*** active)
IT 346577-47-7P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(crystallog. of laser dye; several org. salts with high ***two*** - ***photon*** active)

IT 284025-50-9
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(lack of mass spectral fragmentation; several org. salts with high ***two*** - ***photon*** active)
IT 346577-45-5P 346577-46-6P
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(laser dye; several org. salts with high ***two*** - ***photon*** active)
IT 74-88-4, Methyl iodide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(quaternization of 4-picoline to laser dye precursor; several org. salts with high ***two*** - ***photon*** active)
IT 108-89-4, 4-Picoline
RL: RCT (Reactant); RACT (Reactant or reagent)
(quaternization to laser dye precursor; several org. salts with high ***two*** - ***photon*** active)
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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(20) Zhao, C; Chem Mater 1995, V7, P1979 CAPLUS
(21) Zhao, C; J Phys Chem 1996, V100, P4526 CAPLUS

L5 ANSWER 50 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:25347 CAPLUS
DN 134:267722
ED Entered STN: 11 Jan 2001
TI Temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes

AU Lei, H.; Wang, H. Z.; Ren, Y.; Fang, Q.; Zheng, X. G.; Wei, Z. C.; Xu, N. S.; Jiang, M. H.
CS State Key Laboratory of Ultrafast Laser Spectroscopy, Zhongshan University, Canton, 510275, Peop. Rep. China

SO Optics Communications (2001), 187(1-3), 231-234
CODEN: OPCOB8; ISSN: 0030-4018
PB Elsevier Science B.V.
DT Journal
LA English

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73

AB The temporal and spectral properties of ***two*** - ***photon*** induced fluorescence and up-conversion lasing of two new styrylpyridinium laser dyes have been exptl. investigated. Pumped by a 1064 nm mode-locked Nd:YAG laser, effective ***two*** - ***photon*** induced fluorescence with peak wavelength at 635 nm and up-conversion lasing at .apprx.626 nm are emitted from solns. of these dyes in DMF. The lifetimes of ***two*** - ***photon*** up-conversion fluorescence of the ***two*** dyes are 65 and 67 ps. At picosecond laser pumping, the efficiency of up-conversion lasing is 8.4% and 9.1% for the two new dyes.

ST styrylpyridinium ***two*** ***photon*** emission laser dye
IT Fluorescent dyes
(***cyanine*** ; temporal and spectral behaviors of ***two*** -

photon induced emission laser dyes)
IT Laser induced fluorescence
(excitation; in temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes)
IT ***Cyanine*** dyes
(fluorescent; temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes)
IT Absorption spectra
Fluorescence decay
Fluorescence up-conversion
(in temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes)
IT Fluorescence excitation
(laser induced; in temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes)
IT Dyes
(laser; temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes)
IT Laser induced fluorescence
Luminescence
(***two*** - ***photon*** ; in temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes)
IT 284025-51-0 324077-31-8
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(dye; temporal and spectral behaviors of ***two*** - ***photon*** induced emission laser dyes)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 51 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:279060 CAPLUS
DN 135:122592
ED Entered STN: 19 Apr 2001
TI Synthesis and long wavelength hyper-Rayleigh scattering measurements of extended .mu.-vinylidene di-iron donor based organometallic ***merocyanines***
AU Farrell, T.; Meyer-Friedrichsen, T.; Malessa, M.; Wittenburg, C.; Heck, J.; Manning, A. R.
CS University College Dublin, Belfield, Dublin, Ire.
SO Journal of Organometallic Chemistry (2001), 625(1), 32-39
CODEN: JORCAI; ISSN: 0022-328X
PB Elsevier Science S.A.
DT Journal
LA English
CC 29-12 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 73
OS CASREACT 135:122592
AB The synthesis is reported of a series of extended .pi.-bridged organometallic ***merocyanines*** linking the dicyanovinyl electron accepting group with the electron donating [(CpFeCO)2(.mu.-CO)(.mu.-C:CH-)] fragment. The chromophores exhibited inverse solvatochromic shifts with increased medium polarity, which is because of interactions between dipolar or protic solvents and the dicyanovinyl unit. The nonlinear optical (NLO) properties of the chromophores have been investigated using long wavelength (1500 nm) hyper-Rayleigh scattering techniques to avoid both resonance and ***two*** - ***photon*** absorption enhancement of the first hyperpolarizabilities.
ST cyclopentadienyl iron dicyanovinyl ***merocyanine*** complex prepn

nonlinear optical property; vinylidene iron dinuclear ***merocyanine***
complex prepn optical property
IT Nonlinear optical properties
Optical hyperpolarizability
Solvatochromism
(synthesis and long wavelength hyper-Rayleigh scattering measurements of extended .mu.-vinylidene di-iron donor based organometallic ***merocyanines***)
IT 119535-29-4
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(IR and NMR spectra and Wittig Horner Wadsworth Emmons reaction with phosphonates)
IT 86420-26-0
RL: PRP (Properties)
(IR and NMR spectra of)
IT 38186-51-5 192801-97-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(Wittig Horner Wadsworth Emmons reaction with formylvinylidene bridged iron dinuclear complex)
IT 351345-84-1P 351345-85-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and formylation of)
IT 351345-88-5P 351345-89-6P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. and nonlinear optical property of)
IT 351345-86-3P 351345-87-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction with malononitrile)
RE.CNT 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L5 ANSWER 52 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:12553 CAPLUS
DN 136:403140
ED Entered STN: 06 Jan 2002
TI Optical properties of a new ***two*** - ***photon*** absorbing material trans-4-[p-(N-hydroxyethyl-N-methylamino)styryl]-N-methylpyridinium p-toluene sulfonate
AU Wang, Chun; Ren, Yan; Shao, Zongshu; Zhao, Xian; Zhou, Guangyong; Wang, Dong; Fang, Qi; Jiang, Minhua
CS Institute of Crystal Materials and State Key Laboratory of Crystal, Shandong University, Jinan, 250100, Peop. Rep. China
SO MCLC S&T, Section B: Nonlinear Optics (2001), 28(1-2), 1-13
CODEN: MCLOEB; ISSN: 1058-7268
PB Gordon & Breach Science Publishers
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
OS CASREACT 136:403140
AB The dye trans-4-[p-(N-hydroxyethyl-N-methylamino)styryl]-N-methylpyridinium p-toluenesulfonate was synthesized and the ***two*** - ***photon*** absorption (TPA), TPA-induced frequency up-conversion emission, and ***two*** - ***photon*** pumped frequency up-converted lasing properties were exptl. studied. This new dye has a moderate TPA cross-section of .sigma.2 = 6.0 .times. 10-48 cm4.bul.s/photon at 1064 nm, but exhibits a high lasing efficiency. The overall efficiency is 16.8% at the pump energy level of 2.02 mJ.
ST styryl laser dye ***two*** ***photon*** absorbing prepn
IT Dyes
(laser; prepn. and ***two*** - ***photon*** absorbing properties of styryl laser dye)
IT ***Two*** - ***photon*** absorption
(nonlinear; prepn. and ***two*** - ***photon*** absorbing properties of styryl laser dye)
IT Fluorescence
Fluorescence up-conversion
(prepn. and spectroscopic properties of styryl laser dye)
IT ***Cyanine*** dyes
(prepn. and ***two*** - ***photon*** absorbing properties of styryl laser dye)
IT Laser induced fluorescence
(***two*** - ***photon*** ; prepn. and spectroscopic properties of styryl laser dye)
IT Nonlinear optical absorption
(***two*** - ***photon*** ; prepn. and ***two*** - ***photon*** absorbing properties of styryl laser dye)
IT 284025-51-0P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn. and ***two*** - ***photon*** absorbing properties of styryl laser dye)

IT 16836-95-6P, Silver p-toluenesulfonate
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and ***two*** - ***photon*** absorbing properties of styryl laser dye)
IT 1201-91-8, 4-[N-(2-Hydroxyethyl)-N-methylamino]benzaldehyde 2301-80-6
6192-52-5, p-Toluenesulfonic acid monohydrate 7761-88-8, Silver nitrate, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and ***two*** - ***photon*** absorbing properties of styryl laser dye)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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L5 ANSWER 53 OF 92 INSPEC (C) 2006 IEE on STN
AN 2000:6669655 INSPEC DN A2000-18-7865T-006
TI Photon-mediated hybridization of Frenkel excitons in organic semiconductor microcavities.

AU Lidzey, D.G.; Bradley, D.D.C. (Dept. of Phys. & Astron., Sheffield Univ., UK); Armitage, A.; Walker, S.; Skolnick, M.S.

SO Science (2 June 2000) vol.288, no.5471, p.1620-3. 24 refs.
Published by: American Assoc. Adv. Sci
Price: CCCC 0036-8075/2000/$8.00
CODEN: SCIEAS ISSN: 0036-8075
SICI: 0036-8075(20000602)288:5471L.1620:PMHF;1-R
DT Journal
TC Experimental
CY United States
LA English

AB Coherent excitations of intricate assemblies of molecules play an important role in natural photosynthesis. Microcavities are wavelength-dimension artificial structures in which excitations can be made to couple through their mutual interactions with confined ***photon*** modes. Results for microcavities containing ***two*** spatially separated ***cyanine*** dyes are presented here, where simultaneous strong coupling of the excitations of the individual dyes to a single cavity mode leads to new eigenmodes, described as admixtures of all three states. These "hybrid" exciton-photon structures are of potential interest as model systems in which to study energy capture, storage, and transfer among coherently coupled molecular excitations.

CC A7865T Optical properties of organic compounds and polymers (thin films/low-dimensional structures); A7135 Excitons and related phenomena
CT DYES; EXCITONS; MICRO-OPTICS; OPTICAL DISPERSION; ORGANIC SEMICONDUCTORS; REFLECTIVITY
ST photon-mediated hybridization; Frenkel excitons; organic semiconductor microcavities; coherent excitations; natural photosynthesis; wavelength-dimension artificial structures; mutual interactions; confined photon modes; ***spatially separated cyanine dyes*** ; single cavity mode; eigenmodes; exciton-photon structures; model systems; energy capture; energy storage; energy transfer; coherently coupled molecular excitations

L5 ANSWER 54 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 4
AN 2000:271434 CAPLUS
DN 132:315511

ED Entered STN: 26 Apr 2000
TI ***Two*** - ***photon*** absorption and ***two*** -exciton polaron structure in molecular aggregates
AU Kato, T.; Kobayashi, S.
CS Electrotechnical Laboratory, Materials Science Division, Tsukuba, Japan
SO Journal of Luminescence (2000), 87-89, 281-283
CODEN: JLUMA8; ISSN: 0022-2313
PB Elsevier Science B.V.
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The authors examine the effect of the exciton-phonon coupling strength on the band shape of both the 1- and the two-exciton polaron states by using the Green function formalism proposed recently. ***Two*** - ***photon*** absorption spectra are considered in connection with the possibility to observe the lowest two-exciton polaron band in J aggregates of ***cyanine*** dye mols.
ST ***two*** ***photon*** absorption exciton polaron mol aggregate
IT Phonon
(-exciton coupling; ***two*** - ***photon*** absorption and ***two*** -exciton polaron structure in mol. aggregates)
IT Polaron
(exciton; ***two*** - ***photon*** absorption and ***two*** -exciton polaron structure in mol. aggregates)
IT Green function
(formalism; ***two*** - ***photon*** absorption and ***two*** -exciton polaron structure in mol. aggregates)
IT ***Cyanine*** dyes
J-aggregates
Two - ***photon*** absorption
(***two*** - ***photon*** absorption and ***two*** -exciton polaron structure in mol. aggregates)
IT 977-96-8, Pseudoisocyanine
RL: OCU (Occurrence, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); OCCU (Occurrence); PROC (Process)
(***two*** - ***photon*** absorption and ***two*** -exciton polaron structure in mol. aggregates)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 55 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:704830 CAPLUS
DN 134:43368
ED Entered STN: 06 Oct 2000
TI ***Two*** ***photon*** absorption properties of ***bis*** (N-carbazolyl)-poly-phenylenes
AU Kotler, Z.; Segal, J.; Sigalov, M.; Ben-Asuly, A.; Khodorkovsky, V.
CS Photonic Materials Group, Electro-optics Division, Soreq NRC, Yavne, 81800, Israel
SO Synthetic Metals (2000), 115(1-3), 269-273
CODEN: SYMEDZ; ISSN: 0379-6779
PB Elsevier Science S.A.
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
AB We studied the ***two*** - ***photon*** absorption (TPA) properties of conjugated, sym. bis(N-carbazolyl)diphenylpolyenes and bis(N-carbazolyl)triphenylpolyenes. These novel mols. relate to the family of bis-donor-di-phenylpolyenes recently shown to possess very high ***two*** - ***photon*** absorption and fluorescence coeffs. The sym. substitution of carbazole end-groups enhances the photostability of the mols. and at the same time maintains high TP coeffs. (.delta.max.degree.1000 GM) as detd. from ***two*** - ***photon*** fluorescence measurements with picosecond pulse excitation. A blue shift of the linear absorption and a red shift of the TP peak reflect a larger proximity of the one and ***two*** ***photon*** states in

carbazole substituted chromophores. High fluorescence quantum yield (0.6-0.8) was found in most of the mols. studied. These results suggest that efficient and photostable TP chromophores with carbazole donors are promising materials for applications in ***two*** - ***photon*** imaging and sensitization.

ST carbazole stilbene dye ***two*** ***photon*** absorption; fluorescence carbazole stilbene deriv dye

IT Fluorescence
(in ***two*** - ***photon*** absorption properties of carbazole stilbene deriv. dyes)

IT ***Two*** - ***photon*** absorption
(of carbazole stilbene deriv. dyes)

IT ***Cyanine*** dyes
(***two*** - ***photon*** absorption properties of carbazole stilbene deriv. dyes)

IT Laser induced fluorescence
(***two*** - ***photon*** ; ***two*** - ***photon*** spectral properties of carbazole stilbene deriv. dyes)

IT 96710-93-9 276254-52-5 276254-53-6
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(dye; ***two*** - ***photon*** absorption properties of carbazole stilbene deriv. dyes)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L5 ANSWER 56 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN

AN 2000:87576 CAPLUS
DN 132:228955
ED Entered STN: 07 Feb 2000

TI Fourier analysis of the femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes

AU Clays, Koen; Wostyn, Kurt; Olbrechts, Geert; Persoons, Andre; Watanabe, Akira; Nogi, Kyoko; Duan, Xuan-Ming; Okada, Shuji; Oikawa, Hidetoshi; Nakanishi, Hachiro; Vogel, Henryk; Beljonne, David; Bredas, Jean-Luc

CS Center for Research on Molecular Electronics and Photonics, Laboratory of Chemical and Biological Dynamics, Department of Chemistry, University of Leuven, Louvain, B-3001, Belg.

SO Journal of the Optical Society of America B: Optical Physics (2000), 17(2), 256-265
CODEN: JOBPDE; ISSN: 0740-3224

PB Optical Society of America

DT Journal

LA English

CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22

AB Five fluorescent and ionic dimethylamino stilbazolium homologs with increasing conjugation length (from ethenyl to decapentaenyl) were studied by high-frequency, amplitude-modulated femtosecond hyper-Rayleigh scattering at 1300 nm. A hyperpolarizability value that is not overestimated by the presence of a ***multiphoton*** fluorescence contribution was obtained from the Fourier anal. of the hyper-Rayleigh scattering signal. The demodulation curve (decrease of Fourier amplitude vs. modulation frequency) was characterized by both the hyperpolarizability value and the fluorescence decay parameters. The fluorescence decay parameters are accurately detd. independently by single-photon counting. A detailed anal. of the fluorescence decay parameters from the hyper-Rayleigh scattering demodulation curve and of

their relation to the fluorescence decay parameters obtained from single-photon counting expts. is presented. The inherent hyperpolarizability value for these chromophores shows a max. of (2045 .+-. 35) 10-30 esu or (760 .+-. 13).times.10-50 C3 m3 J-2 for the hexatrienyl conjugation length. A comparison with theor. calcns. suggests the importance of trans-cis isomerization in the excited state.

ST Fourier analysis hyper Rayleigh scattering dye; ionic fluorescent hemicyanine dye hyperpolarizability fluorescence

IT Fluorescence decay
Fluorescent substances
Optical hyperpolarizability
UV and visible spectra
(Fourier anal. of femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes)

IT Isomerization
(cis-trans, in excited state; Fourier anal. of femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes)

IT ***Cyanine*** dyes
(hemicyanine; Fourier anal. of femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes)

IT Electromagnetic wave scattering
(hyper-Rayleigh; Fourier anal. of femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes)

IT Excited state
(isomerization in; Fourier anal. of femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes)

IT Fluorescence
(***multiphoton*** ; Fourier anal. of femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes)

IT 142373-45-3 261617-99-6 261618-00-2 261618-01-3 261618-02-4
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(Fourier anal. of femtosecond hyper-Rayleigh scattering signal from ionic fluorescent hemicyanine dyes)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L5 ANSWER 57 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 5
AN 2001:886235 CAPLUS
DN 137:34447

ED Entered STN: 07 Dec 2001
TI Nonlinear optical properties of specific ***polymethines*** : Influence of substituents and chain length
AU Feldner, Andreas; Scherer, Dieter; Welscher, Markus; Vogtmann, Thomas; Schwoerer, Markus; Lawrentz, Ulf; Laue, Thomas; Johannes, Hans-Hermann; Grahn, Walter
CS Lehrstuhl fur Experimentalphysik II and Bayreuther Institut fur Makromolekulforschung, Universitat Bayreuth, Bayreuth, D-95440, Germany
SO MCLC S&T, Section B: Nonlinear Optics (2000), 26(1-3), 99-106
CODEN: MCLOEB; ISSN: 1058-7268
PB Gordon & Breach Science Publishers
DT Journal
LA English
CC 41-6 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
AB The nonlinear optical response of conjugated .pi. electron systems of dye oligomers, including ***cyanines*** , rigid ***merocyanines*** , and squaraines were studied. The third-order nonlinear optical susceptibility (.chi.3) of dye solns. was studied using THG [third harmonic generation], DFWM [degenerate four-wave mixing], and pump-probe expts. The mol. hyperpolarizability was obtained from variations of .chi.3 with concn. The ***two*** - ***photon*** absorption was detd. from ***two*** - ***photon*** fluorescence data. Time-resolved measurements did not show any broadening of the third-order autocorrelation. The energy level and optical absorption cross-sections of ***two*** - ***photon*** excited states were also obtained from ***two*** - ***photon*** fluorescence data.
ST ***polymethine*** conjugated dye nonlinear optical property chain length; hyperpolarizability concn ***polymethine*** conjugated ***cyanine*** ***merocyanine*** squaraine; rigidity conjugated system dye oligomer nonlinear optical response
IT ***Cyanine*** dyes
Nonlinear optical absorption
Optical hyperpolarizability
Third-order nonlinear optical susceptibility
Two - ***photon*** absorption
(effects of substituent and chain length on nonlinear optical properties of conjugated ***cyanine*** and ***merocyanine*** and squaraine ***polymethines***)
IT Chemical chains
(length; effects of substituent and chain length on nonlinear optical properties of conjugated ***cyanine*** and ***merocyanine*** and squaraine ***polymethines***)
IT Excited electronic state
Laser induced fluorescence
(***two*** - ***photon*** ; effects of substituent and chain length on nonlinear optical properties of conjugated ***cyanine*** and ***merocyanine*** and squaraine ***polymethines***)
IT 38575-74-5 61575-71-1 61575-72-2 88475-75-6 223272-04-6
280106-17-4 280106-18-5 280106-19-6 280106-20-9 280106-21-0
280106-22-1 280106-27-6 426233-33-2 436158-86-0 436158-88-2
436158-90-6 436158-92-8 436158-94-0 436158-96-2 436158-98-4
436159-00-1 436159-02-3 436159-04-5 436159-06-7 436159-08-9
436159-10-3 436159-12-5 437609-19-3 437609-20-6 437609-21-7
RL: PRP (Properties)
(effects of substituent and chain length on nonlinear optical properties of conjugated ***cyanine*** and ***merocyanine*** and squaraine ***polymethines***)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(4) Xu, C; J Opt Soc Am B 1996, V13, P481 CAPLUS

L5 ANSWER 58 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:661803 CAPLUS
DN 132:13099
ED Entered STN: 18 Oct 1999
TI Synthesis and ***photonics*** of ketocyanine dyes, 2,6- ***bis*** (4-dimethylaminoalka-1,3-dienyl)-4H-pyran-4-ones and ethoxytridecamethine

salts based on them
AU Krasnaya, Zh. A.; Smirnova, Yu. V.; Tatikolov, A. S.; Kuz'min, V. A.
CS N. D. Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Moscow, 117913, Russia
SO Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (1999), 48(7), 1329-1334
CODEN: RCBUEY; ISSN: 1066-5285
PB Consultants Bureau
DT Journal
LA English
CC 41-6 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
AB The reactions of .beta.-dimethylaminoacrolein aminals with 2,6-dimethyl-.gamma.-pyrone lead to 2,6-bis(4-dimethylaminoalka-1,3-dienyl)-4H-pyran-4-ones, whose alkylation affords ethoxytridecamethine salts. The spectral and fluorescence properties of the synthesized compds. were studied. Their absorption spectra are unusual; along with the long-wavelength band in the visible spectral region, they contain a much more intense short-wavelength band in the near UV region. This pattern of the absorption spectra is explained in terms of the model of chromophore interaction, assuming an acute angle between the chromophore "halves" of the polyene chain of the dye mol. The central pyran ring in the ethoxytridecamethine salts can hamper conjugation in the ***polymethine*** chain. Thermochromism of 2,6-bis(4-dimethylaminoalka-1,3-dienyl)-4H-pyran-4-ones (the long-wavelength shift of the absorption spectra on cooling of the solns.) is obsd.; only the long-wavelength absorption band undergoes a pronounced thermochromic shift. The introduction of Me or Ph substituents into the polyene chains of substituted 4H-pyranones decreases the fluorescence quantum yield.
ST pyranone ***cyanine*** dye prepn fluorescence thermochromism
IT Fluorescent dyes
Fluorescent dyes
(***cyanine*** ; prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)
IT Thermochromic materials
Thermochromic materials
(dyes; prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)
IT Molecular structure-property relationship
(fluorescence; of pyranone ***cyanine*** dyes)
IT ***Cyanine*** dyes
Cyanine dyes
(fluorescent; prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)
IT Substituent effects
(on photonics of pyranone ***cyanine*** dyes)
IT Fluorescence
Thermochromism
(prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)
IT Dyes
Dyes
(thermochromic; prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)
IT 251345-22-9P 251345-23-0P 251345-24-1P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(dye; prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)
IT 251345-26-3P 251345-28-5P 251345-30-9P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)
IT 368-39-8, Triethyloxonium tetrafluoroborate 1004-36-0, 2,6-Dimethyl-4-pyranone 5043-86-7 66220-94-8 74869-78-6
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn., fluorescence and thermochromism of pyranone ***cyanine*** dyes)

L5 ANSWER 59 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:26996 CAPLUS
DN 132:167663
ED Entered STN: 13 Jan 2000
TI Synthesis and study of ***two*** - ***photon*** induced fluorescence of novel dyes
AU Wu, Li Zhu; Tang, Xin Jing; Jiang, Min Hua; Tung, Chen Ho
CS Center for Molecular Science, Institute of Chemistry, The Chinese Academy of Sciences, Beijing, 100080, Peop. Rep. China
SO Chinese Chemical Letters (1999), 10(12), 1019-1022
CODEN: CCLEE7; ISSN: 1001-8417
PB Chinese Chemical Society
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
AB The synthesis and upconverted fluorescent properties of three styryl dyes with the structure donor/bridge/acceptor are reported. The dyes show strong upconverted fluorescence at 639-666 nm using a 1064 nm laser.
ST styryl dye prepn fluorescence
IT Fluorescent dyes
Fluorescent dyes
(***cyanine*** ; prepn. and 2-photon laser-induced fluorescence of styryl dyes)
IT ***Cyanine*** dyes
Cyanine dyes
(fluorescent; prepn. and 2-photon laser-induced fluorescence of styryl dyes)
IT Laser induced fluorescence
(***two*** - ***photon*** ; prepn. and 2- ***photon*** laser-induced fluorescence of styryl dyes)
IT 258851-69-3P 258851-72-8P 258851-77-3P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prepn. and 2-photon laser-induced fluorescence of styryl dyes)
IT 2785-06-0P, 2,3-Dimethylbenzothiazolium iodide 5418-63-3P, 1,2,3,3-Tetramethylindolium iodide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. and 2-photon laser-induced fluorescence of styryl dyes)
IT 74-88-4, Methyl iodide, reactions 100-10-7, 4-(Dimethylamino)benzaldehyde 120-75-2, 2-Methylbenzothiazole 1640-39-7, 2,3,3-Trimethylindolenine 63619-28-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. and 2-photon laser-induced fluorescence of styryl dyes)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 60 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:296141 CAPLUS
DN 131:51909
ED Entered STN: 14 May 1999
TI Photophysics of ***cyanine*** dyes on surfaces: laser-induced photoisomer emission of 3,3'-dialkylthiacarbocyanines adsorbed on microcrystalline cellulose
AU Oliveira, Anabela S.; Almeida, Paulo; Ferreira, Luis Filipe Vieira
CS Centro de Quimica Fisica Molecular - Complexo Interdisciplinar, Instituto Superior Tecnico, Lisbon, 1096, Port.
SO Collection of Czechoslovak Chemical Communications (1999), 64(3), 459-473
CODEN: CCCCAK; ISSN: 0010-0765
PB Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DT Journal
LA English

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73

AB The photophysics of three thiacarbocyanine dyes, 3,3'-dimethylthiacarbocyanine iodide (DMTCC), 3,3'-diethylthiacarbocyanine iodide (DETCC), and 3,3'-dipropylthiacarbocyanine iodide (DPTCC) was studied when adsorbed on microcryst. cellulose in the concn. range from 5.0.times.10-4 to 10.0 .mu.mol g-1. Using ground-state diffuse reflectance absorption technique, only H aggregate formation was detected for all the probes. The amt. of aggregate formed depended on the hydration degree of the sample, always decreasing with sample dryness. The fluorescence quantum yields for all the adsorbed dyes were one order of magnitude higher than those obsd. in nonviscous solvents, being 0.98 for DMTCC, 0.96 for DETCC, and 0.63 for DPTCC. Laser-induced fluorescence emissions were recorded (using an intensified-charge-coupled-device detection system) as a function of the laser power, showing that for dry concd. samples irradiated with high laser intensity, a second fluorescence emission band (bathochromically shifted relative to the monomer emission) was detected. This emission showed a supra-linear dependence on laser power. The new emissions here detected arised from fluorescent photoisomers formed via singlet monomers, by a ***two*** - ***photon*** absorption process.

ST photophysics ***cyanine*** dye adsorbed microcryst cellulose; photoisomerization ***cyanine*** dye adsorbed microcryst cellulose

IT Reflection spectra
Reflection spectra
(UV-visible diffuse, absorption; photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT Absorption spectra
(diffuse reflectance; photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT UV and visible spectra
UV and visible spectra
(diffuse reflection, absorption; photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT Molecular association
(microcryst.; photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT Isomerization
(photoisomerization; photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT Adsorbed substances
Cyanine dyes
Laser induced fluorescence
Two - ***photon*** absorption
(photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT Fluorescence
(photophysics of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT 9004-34-6, Cellulose, uses
RL: NUU (Other use, unclassified); USES (Uses)
(microcryst.; photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

IT 905-97-5, 3,3'-Diethylthiacarbocyanine iodide 1742-91-2, 3,3'-Dimethylthiacarbocyanine iodide 53336-12-2
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(photophysics and laser-induced photoisomer emission of dialkylthiacarbocyanines adsorbed on microcryst. cellulose)

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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L5 ANSWER 61 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:27919 CAPLUS
DN 132:182024
ED Entered STN: 13 Jan 2000
TI ***Two*** - ***photon*** induced fluorescence of novel dyes
AU Wu, Li-Zhuy; Tang, Xin-Jing; Jiang, Min-Hua; Tung, Chen-Ho
CS Institute of Chemistry, Center for Molecular Science, The Chinese Academy of Sciences, Beijing, Peop. Rep. China
SO Chemical Physics Letters (1999), 315(5,6), 379-382
CODEN: CHPLBC; ISSN: 0009-2614
PB Elsevier Science B.V.
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
AB Three styryl dyes, trans-2-[p-(N-ethyl-N-(2-hydroxyethyl)amino)styryl]-N-methylbenzothiazolium iodide (I), trans-2-[p-(N-ethyl-N-(2-hydroxyethyl)amino)styryl]-1',3',3'-trimethylindolium iodide (II), and trans-2-[p-(N,N-dimethylamino)styryl]-1',3',3'-trimethylindolium iodide (III), were synthesized and their ***two*** - ***photon*** induced fluorescence behavior was studied. Under excitation by 1064 nm laser irradn., the solns. of these compds. exhibit ***two*** - ***photon*** induced fluorescence with .lambda.max at 639, 666, and 665 nm for I, II, and III, resp.
ST ***cyanine*** dye fluorescence ***two*** ***photon*** induced
IT ***Cyanine*** dyes
(cationic; ***two*** - ***photon*** induced fluorescence of styryl dyes)

IT Fluorescent dyes
Fluorescent dyes
(***cyanine*** ; ***two*** - ***photon*** induced fluorescence of styryl dyes)
IT ***Cyanine*** dyes
Cyanine dyes
(fluorescent; ***two*** - ***photon*** induced fluorescence of styryl dyes)
IT UV and visible spectra
(of styryl dyes)
IT Laser induced fluorescence
(***two*** - ***photon*** ; of styryl dyes)
IT 258851-69-3 258851-72-8 258851-77-3
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(***two*** - ***photon*** induced fluorescence of styryl dyes)
IT 68-12-2, DMF, uses 100-51-6, Benzyl alcohol, uses
RL: NUU (Other use, unclassified); USES (Uses)
(***two*** - ***photon*** induced fluorescence of styryl dyes in)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L5 ANSWER 62 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 6
AN 1999:365198 CAPLUS
DN 131:151376
ED Entered STN: 14 Jun 1999
TI Spirobenzopyran-doped core PMMA fibers
AU Cokgor, Ilkan; Dvornikov, Alexander S.; Piyaket, Ram; Esener, Sadik C.; Rentzepis, Peter M.; Garvey, Dennis W.; Kuzyk, Mark G.
CS Call/Recall, Inc., San Diego, CA, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3623(Organic Photonic Materials and Devices), 215-223
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 74
AB Cylindrical PMMA fibers with core regions doped with spirobenzopyran mols. were fabricated. Spirobenzopyran is a photochromic mol. with 2 forms: spiropyran and ***merocyanine*** . In the fibers, 1 state could be reverted to the other either by a photo-initiated reaction or by thermal excitation. The fluorescence from the ***merocyanine*** form could be generated by exciting the core with a 543. nm laser. For spirobenzopyran, higher temps. favor the reaction form spiropyran form to ***merocyanine*** form, hence as temp. increases the ***merocyanine*** from concn. in the core increase causing the fluorescence intensity to increase. The fluorescence increased fairly linearly over a certain range and started rolling off as the temp. approached to 60.degree.. Refractive index and material dispersion characteristics of SP/PMMA was measured. Fluorescence generation in the core by 2-photon absorption from 40 ps pulses at 1064 nm was demonstrated. The energy of the pulses was 1.8 .mu.J, which gave a peak intensity of 5 GW/cm2 in 33 .mu.m core. A portion of the emitted fluorescence was guided to the end of the fiber and a portion of it escaped the cladding and radiated into the air.
ST spirobenzopyran doped core PMMA fiber
IT ***Two*** - ***photon*** absorption
(by spirobenzopyran-doped core PMMA fibers)
IT Fluorescence
Optical dispersion

Refractive index
(of spirobenzopyran-doped core PMMA fibers)
IT Optical fibers
(spirobenzopyran-doped core PMMA)
IT 1498-88-0
RL: MOA (Modifier or additive use); USES (Uses)
(-doped core PMMA fibers)
IT 9011-14-7, PMMA
RL: DEV (Device component use); USES (Uses)
(spirobenzopyran-doped core fibers of)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(3) Garvey, D; J Opt Soc Am B 1996, V13, P2017 CAPLUS
(4) Kuzyk, M; Appl Phys Lett 1991, V59, P902 CAPLUS
(5) Piyaket, R; Optics Letter 1996, V22, P1032

L5 ANSWER 63 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:716650 CAPLUS
DN 132:17046
ED Entered STN: 10 Nov 1999
TI Langmuir-Blodgett films of a new hemicyanine dye
AU Ricceri, Riccardo; Gabrielli, Gabriella
CS Department of Chemistry and C.S.G.I., University of Florence, Florence, I-50121, Italy
SO Thin Solid Films (1999), 353(1,2), 214-217
CODEN: THSFAP; ISSN: 0040-6090
PB Elsevier Science S.A.
DT Journal
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41
AB The Langmuir-Blodgett (LB) characteristics of 1-(N-ethyl-1-sulfonate-4-pyridinio)-2-[N-(n-hexadecyl) pyrrol-2-yl]ethene films were reported. Surface pressure-area isotherms of spreading monolayers were investigated at pure water-air interface; LB films were characterized by UV-vis and steady-state fluorescence spectroscopies. The compd. is photobleachable and undergoes a dimerization reaction in the monolayer; in soln., the strongly absorbing band due to a .pi. .fwdarw. .pi.* transition in the visible region disappears upon exposure of the compd. to visible light. A blue shift of this band in LB films with respect to the soln. was attributed to a deck-of-cards packing of the chromophore in the film. The photobleachable absorption band could have potential applications in optical data storage; the mol. could also be very interesting for ***two*** - ***photon*** pumped (TPP) frequency-upconversion laser applications.
ST Langmuir Blodgett film hemicyanine dye; photobleaching Langmuir Blodgett film dye; dimerization monolayer hemicyanine dye
IT ***Cyanine*** dyes
(hemicyanine; optical properties of Langmuir-Blodgett films of novel hemicyanine dye)
IT Dimerization
(monolayer; optical properties of Langmuir-Blodgett films of novel hemicyanine dye)
IT Photochemical bleaching
(of hemicyanine dye; optical properties of Langmuir-Blodgett films of novel hemicyanine dye)
IT Langmuir-Blodgett films
(optical properties of Langmuir-Blodgett films of novel hemicyanine dye)
IT Optical recording
(potential of; optical properties of Langmuir-Blodgett films of novel hemicyanine dye)
IT Optical up-conversion
(***two*** - ***photon*** ; optical properties of Langmuir-Blodgett films of novel hemicyanine dye)
IT Optical pumping
(upconversion; optical properties of Langmuir-Blodgett films of novel hemicyanine dye)
IT 251576-30-4

RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative) (formation of; optical properties of Langmuir-Blodgett films of novel hemicyanine dye)

IT 251576-29-1
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent) (optical properties of Langmuir-Blodgett films of novel hemicyanine dye)

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(3) Ando, E; Thin Solid Films 1988, V160, P279 CAPLUS
(4) Ashwell, G; J Chem Soc Chem Commun 1990, P1355 CAPLUS
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L5 ANSWER 64 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1999:780915 CAPLUS
DN 132:309699
ED Entered STN: 10 Dec 1999

TI Hyper-Rayleigh scattering and ***multiphoton*** fluorescence of new ***merocyanine*** dye and stilbazolium salt

AU Wang, Xin; Lu, Zuhong; Cui, Yiping; Xue, Qingbin; Yang, Kongzhang
CS National Lab. of Molecular and Biomolecular Electron., Southeast Univ., Nanjing, Peop. Rep. China

SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3863(Biomedical Optics (BMO '99)), 162-166
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English

CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73

AB In this paper, two new ionic species in the classes of ***merocyanine*** dye and stilbazolium salt are studied by the newly developed hyper-Rayleigh scattering (HRS) technique. Both dyes are solns. in methanol under the 1064 nm-laser radiation in the expts. The results show that the value of the first-order hyperpolarizability (.beta.) for the ***merocyanine*** dye is very large and for the stilbazolium salt it is abnormally large. Further studies reveal that both the ***merocyanine*** dye and the stilbazolium salt has ***multiphoton*** fluorescence (MPF) emission which overlaps the HRS signal at 532 nm under the radiation of 1064 nm but the ***merocyanine*** dye's MPF is weaker. If we cut off the MPF from the HRS signal, the .beta. value for the ***merocyanine*** dye is in the range of 10-28 esu and the .beta. value for the stilbazolium salt is approx. equals 10-27 esu, which is among the largest soln. values of .beta. for org. species.

ST hyper Rayleigh scattering ***merocyanine*** stilbazolium dye; hyperpolarizability first order ***merocyanine*** stilbazolium dye;

fluorescence ***multiphoton*** ***merocyanine*** stilbazolium dye
IT Nonlinear optical properties
(higher-order; of ***merocyanine*** and stilbazolium dyes)
IT Laser radiation scattering
(hyper-; of ***merocyanine*** and stilbazolium dyes)
IT ***Cyanine*** dyes
(hyper-Rayleigh scattering and ***multiphoton*** fluorescence of)
IT Fluorescence
(***multiphoton*** ; of ***merocyanine*** and stilbazolium dyes)
IT Optical hyperpolarizability
(of ***merocyanine*** and stilbazolium dyes)
IT 265995-26-4 265995-29-7
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(dye; hyper-Rayleigh scattering and ***multiphoton*** fluorescence of)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Ashwell, G; Nature 1992, V357, P393 CAPLUS
(2) Chemla, D; Nonlinear Optical Properties of Organic Molecules and Crystals 1987, V1, P54
(3) Clays, K; Phys Rev Lett 1991, V66(23), P2980 CAPLUS
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L5 ANSWER 65 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 7
AN 2000:36371 CAPLUS
DN 132:257698
ED Entered STN: 17 Jan 2000
TI Nonlinear spectrometer for characterization of organic and polymeric molecules
AU Negres, Raluca A.; Van Stryland, Eric W.; Hagan, David J.; Belfield, Kevin D.; Schafer, Katherine J.; Przhonska, Olga V.; Reinhardt, Bruce A.
CS Sch. Optics, CREOL/Univ. of Central Florida, Orlando, FL, USA
SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3796(Organic Nonlinear Optical Materials), 88-97
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The authors have developed a femtosecond continuum spectrometer to measure nonlinear absorption spectra from 300 nm in the UV to 1.7 .mu.m in the IR. This method is applied for measuring NLA spectra of semiconductor, org. and polymeric materials. The pump-probe nature of the expt. also allows the temporal response to be detd., thus helping in the detg. of the underlying phys. mechanisms for the nonlinearity. The authors describe studies of ***two*** - ***photon*** absorption in alkyl fluorenes and excited state absorption dynamics in ***polymethines*** using this spectrometer.
ST nonlinear optical property excited state ***two*** ***photon*** absorption
IT Polyurethanes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(acrylates; nonlinear spectrometer for characterization of org. and polymeric mols.)
IT Excited state absorption
Nonlinear optical absorption
Two - ***photon*** absorption
UV and visible spectra
(nonlinear spectrometer for characterization of org. and polymeric mols.)
IT 64-17-5, Ethanol, uses 584-08-7 12597-70-5, Copper bronze 17455-13-9, 1,4,7,10,13,16-Hexaoxacyclooctadecane
RL: NUU (Other use, unclassified); USES (Uses)
(nonlinear spectrometer for characterization of org. and polymeric mols.)
IT 84591-85-5 84591-87-7 198346-11-1 262607-20-5 262607-22-7 262607-24-9 262607-26-1

RL: PRP (Properties)
(nonlinear spectrometer for characterization of org. and polymeric mols.)
IT 262607-29-4P 262607-30-7P 262607-32-9P 262607-33-0P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(nonlinear spectrometer for characterization of org. and polymeric mols.)
IT 95-16-9, Benzothiazole 95-50-1, 1,2,Dichlorobenzene 109-72-8, n-Butyl lithium, reactions 122-39-4, N,N-Diphenylamine, reactions 1461-22-9 13965-03-2, Dichlorobis(triphenylphosphine) palladium 14221-01-3, Tetrakis(triphenylphosphine) palladium 262607-28-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(nonlinear spectrometer for characterization of org. and polymeric mols.)
IT 10603-84-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(nonlinear spectrometer for characterization of org. and polymeric mols.)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Albota, M; Science 1998, V281, P1653 CAPLUS
(2) Alfano, R; Phys Rev Lett 1970, V24, P584 CAPLUS
(3) Andrews, J; Nonlinear Optics 1995, V10, P227 CAPLUS
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L5 ANSWER 66 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:723794 CAPLUS
DN 130:1845
ED Entered STN: 16 Nov 1998
TI Physiologically tolerable chromophore-polyalkylene oxide conjugate light imaging contrast agents, and preparation thereof
IN Snow, Robert Allen; Henrichs, Paul Mark; Delecki, Daniel Joseph; Sanderson, William Anthony; Desai, Vinay Chandrakant; Bacon, Edward; Hollister, Kenneth Robert; Hohenschuh, Eric Paul
PA Nycomed Imaging AS, Norway; Cockbain, Julian Roderick Michaelson
SO PCT Int. Appl., 174 pp.
CODEN: PIXXD2
DT Patent
LA English
IC A61K041-00; A61K049-00
CC 8-9 (Radiation Biochemistry)
Section cross-reference(s): 63
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9848838	A1	19981105	WO 1998-GB1244	19980428
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
WO 9848845	A1	19981105	WO 1998-GB1245	19980428
W: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US				

RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG

	AU 9872212	A1	19981124	AU 1998-72212	19980428
	AU 9872213	A1	19981124	AU 1998-72213	19980428
	EP 979103	A1	20000216	EP 1998-919335	19980428
	EP 979103	B1	20040102		

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI

	JP 2002504894	T2	20020212	JP 1998-546749	19980428
	AT 257014	E	20040115	AT 1998-919335	19980428
	ES 2213899	T3	20040901	ES 1998-919335	19980428
	US 6350431	B1	20020226	US 1999-429347	19991028
PRAI	US 1997-848586	A2	19970429		
	GB 1997-27124	A	19971222		
	US 1998-35285	A2	19980305		
	WO 1998-GB1244	W	19980428		
	WO 1998-GB1245	W	19980428		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9848838	IC	A61K041-00; A61K049-00
	IPCI	A61K0041-00; A61K0049-00
	IPCR	A61K0041-00 [I,A]; A61K0041-00 [I,C]; A61K0049-00 [I,A]; A61K0049-00 [I,C]; A61K0049-04 [I,A]; A61K0049-04 [I,C]; A61K0049-06 [I,C]; A61K0049-12 [I,A]
	ECLA	A61K041/00M4; A61K041/00W; A61K049/00P8; A61K049/00P4F; A61K049/12
WO 9848845	IPCI	A61K0049-00; A61K0041-00
	IPCR	A61K0041-00 [I,A]; A61K0041-00 [I,C]; A61K0049-00 [I,A]; A61K0049-00 [I,C]; A61K0049-04 [I,A]; A61K0049-04 [I,C]; A61K0049-06 [I,C]; A61K0049-12 [I,A]
	ECLA	A61K041/00M4; A61K049/00P8; A61K049/04H; A61K049/12
AU 9872212	IPCI	A61K0041-00 [ICM,6]; A61K0049-00 [ICS,6]
AU 9872213	IPCI	A61K0049-00 [ICM,6]; A61K0041-00 [ICS,6]
EP 979103	IPCI	A61K0041-00 [ICM,6]; A61K0049-00 [ICS,6]
JP 2002504894	IPCI	A61K0049-00 [ICM,7]; A61B0001-00 [ICS,7]; A61K0031-765 [ICS,7]; A61K0041-00 [ICS,7]; A61P0035-00 [ICS,7]; C07D0311-80 [ICS,7]; C08G0065-02 [ICS,7]; C09B0023-00 [ICS,7]; C09B0069-10 [ICS,7]
AT 257014	IPCI	A61K0041-00 [ICM,7]; A61K0049-00 [ICS,7]
ES 2213899	IPCI	A61K0041-00 [ICM,7]; A61K0049-00 [ICS,7]
US 6350431	IPCI	A61K0049-00 [ICM,7]; C07D0209-62 [ICS,7]
	IPCR	A61K0041-00 [I,A]; A61K0041-00 [I,C]; A61K0049-00 [I,A]; A61K0049-00 [I,C]; A61K0049-04 [I,A]; A61K0049-04 [I,C]; A61K0049-06 [I,C]; A61K0049-12 [I,A]
	NCL	424/009.600; 548/100.000; 548/120.000; 548/223.000; 549/402.000; 549/427.000; 549/455.000
	ECLA	A61K041/00M4; A61K041/00W; A61K049/00P8; A61K049/00P4F; A61K049/04H; A61K049/12

AB Physiol. tolerable light imaging contrast agent compds. are provided having a mol. wt. in the range 500-500,000 and contg. at least two chromophores having delocalized electron systems as well as at least one polyalkylene oxide (PAO) moiety having a mol. wt. in the range 60-100,000.

ST chromophore polyalkylene oxide conjugate imaging agent; light imaging contrast agent prepn

IT Confocal laser scanning microscopy
(and visual observation; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Polyoxyalkylenes, biological studies
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(chromophore conjugates; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Antitumor agents
Drug delivery systems
Light
Neoplasm
Particle size
Therapy
(chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Intestine, neoplasm

(colon, carcinoma, HT-29; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Fluorescence microscopy
(confocal; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Imaging agents
(contrast; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Polyoxyalkylenes, biological studies
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(diamine derivs; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Drug delivery systems
(emulsions, sudan III; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Circulation
(fluorescence imaging; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Drug delivery systems
(liposomes, indocyanine green; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Drug delivery systems
(nanoparticles, fluorescein; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Microscopy
(photoacoustic, acousto-optical, diffusive wave, time-resolved imaging, endoscopic, ***multiphoton*** excitation; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Chromophores
(polyalkylene oxide conjugates; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Rare earth complexes
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(polyalkylene oxide conjugates; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Lymph node
(sentinel; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT Drug targeting
(targeting vectors; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT 603-35-0, Triphenyl phosphine, reactions 7719-09-7, Thionyl chloride 26628-22-8, Sodium azide
RL: RCT (Reactant); RACT (Reactant or reagent)
(chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT 107-15-3DP, Ethylenediamine, reaction product with aluminum chlorophthalocyanine tetrasulfonate 24991-53-5DP, reaction products with aluminumchlorophthalocyaninetetrasulfonyl chloride 25322-68-3DP, diamine derivs 62796-29-6DP, reaction products polyoxyethylene-polyoxypropylene block amino derivs. 68665-24-7DP, polymers with PEG diamine 104469-80-9DP, reaction product with PEG diamine 106392-12-5DP, amino derivs., reaction product with Rhodamine B sulfonyl chloride 110617-70-4DP, reaction product with zinc phthalocyanine deriv. 114251-83-1DP, reaction product with surfactant amino groups 169799-14-8DP, Cy-7, reaction product with Surfactant T 908 amino derivs. 215712-90-6P 215712-91-7P
RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)

IT 574-93-6D, Phthalocyanine, polyalkylene oxide conjugates 581-64-6D, ***Cyanine*** , N-derivs., polyalkylene oxide conjugates 2321-07-5D, Fluorescein, polyalkylene oxide conjugates 7440-19-9D, Samarium, radionuclides, chelates, polyalkylene oxide conjugates, biological studies 7440-26-8D, Technetium, radionuclides, chelates, polyalkylene oxide conjugates, biological studies 7440-50-8D, Copper, radionuclides, chelates, polyalkylene oxide conjugates, biological studies 9004-95-9, Brij 58 25301-02-4, Tyloxapol 106392-12-5, F 68 106392-12-5D, Polyethylene oxide-polypropylene oxide block copolymer, chromophore conjugates 110617-70-4D, Tetronic, chromophore conjugates 177910-36-0,

P79
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)
IT 3599-32-4, Indocyanine green
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(liposomes; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)
IT 63666-10-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and reaction; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)
IT 62-53-3, Aniline, reactions 1120-71-4, 1,3-Propane sultone 17159-79-4, Ethyl 4-oxocyclohexanecarboxylate 24991-53-5 27072-45-3, Fluorescein isothiocyanate 41532-84-7, 1,1,2-Trimethyl-1H-benz[e]indole 62796-29-6 68665-24-7 68865-60-1 110617-70-4 114251-83-1 169799-14-8, Cy-7 215712-92-8
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)
IT 85-86-9, Sudan III
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(stable emulsion; chromophore-polyalkylene oxide conjugate light imaging contrast agents, and prepn. thereof)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Boc Health Care; EP 0536480 A 1993 CAPLUS
(2) Deutsches Krebsforsch; DE 4017439 A 1991 CAPLUS
(3) Enzon Inc; WO 9200748 A 1992 CAPLUS
(4) Salhi, S; NEW J CHEM 1994, V18(7), P783 CAPLUS
(5) Salhi, S; New polymeric materials:porphyrins attached to preformed polystyrene 1994, 14, CAPLUS
(6) Us Health; WO 9525093 A 1995 CAPLUS

L5 ANSWER 67 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:251283 CAPLUS
DN 128:304031
ED Entered STN: 02 May 1998
TI ***Two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids
IN Lakowicz, Joseph R.; Burke, Thomas G.; Gryczynski, Ignacy; Malak, Henryk
PA Lakowicz, Joseph R., USA
SO PCT Int. Appl., 29 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C12Q001-00
ICS G01N033-567; G01N033-53; G01N033-48
CC 1-1 (Pharmacology)
Section cross-reference(s): 9, 80
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9816656	A1	19980423	WO 1997-US18106	19971007
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5759767	A	19980602	US 1996-731270	19961011
PRAI US 1996-731270	A	19961011		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9816656	ICM	C12Q001-00
	ICS	G01N033-567; G01N033-53; G01N033-48
	IPCI	C12Q0001-00 [ICM,6]; G01N0033-567 [ICS,6]; G01N0033-53 [ICS,6]; G01N0033-48 [ICS,6]
	IPCR	A61K0041-00 [I,A]; A61K0041-00 [I,C]; G01N0033-487 [I,A]; G01N0033-487 [I,C]
	ECLA	A61K041/00W16; G01N033/487
US 5759767	IPCI	C12Q0001-00 [ICM,6]; G01N0033-567 [ICS,6]; G01N0033-53 [ICS,6]
	IPCR	A61K0041-00 [I,A]; A61K0041-00 [I,C]; G01N0033-487

[I,A]; G01N0033-487 [I,C]
NCL 435/004.000; 250/200.000; 250/338.100; 250/459.100; 356/004.010; 356/039.000; 435/007.210; 435/968.000; 436/063.000; 436/800.000
ECLA A61K041/00W16; G01N033/487

AB A method of measuring an analyte present in animal (e.g., human) tissue or fluids such as blood or plasma. The analyte is ***multi*** - ***photon*** excitable (e.g., ***two*** - ***photon*** excitable) at a first wavelength at which the animal tissue is substantially non-absorbing. The analyte fluoresces at a second wavelength upon being excited at the first wavelength. The animal tissue is irradiated with radiation at the first wavelength to excite the analyte through absorption by the analyte of ***two*** or more ***photons*** of the radiation at the first wavelength. Excitation of the analyte results in a fluorescent emission from the analyte of radiation at the second wavelength. The emission at the second wavelength is detected, and the concn. of analyte detd. based on the detected emission. A graph showing dependence of topotecan emission intensity in plasma on the excitation intensity at 410, 730 and 820 nm is illustrated.

ST fluorescence analysis photon body fluid; drug analysis tissue body fluid fluorescence

IT Unsaturated compounds
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***cyanines*** ; ***two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

IT ***Photon***
(logtwo- ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

IT Animal tissue
Blood analysis
Body fluid
Fluorescence
Fluorescent substances
Luminescence
Pharmaceutical analysis
(***two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

IT Rare earth metals, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

IT 124549-08-2
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(SBFI; ***two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

IT 195244-55-4, Sodium Green
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Sodium Green; ***two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

IT 19685-09-7, 10-Hydroxycamptothecin 86639-52-3, SN-38 123948-87-8, Topotecan 135415-73-5, 10,11-Methylenedioxycamptothecin 206196-67-0
RL: ANT (Analyte); ANST (Analytical study)
(***two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

IT 260-94-6, Acridine 2321-07-5, Fluorescein 13558-31-1D, N-derivs. 14459-29-1, Hematoporphyrin 73630-23-6, Quin-2 96314-98-6, Fura-2 138067-55-7, Calcium green
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***two*** - ***photon*** and ***multi*** - ***photon*** measurement of analytes in animal and human tissues and fluids)

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Chance; US 5062428 A 1991
(2) Denk; Science 1990, V248, P73 CAPLUS

L5 ANSWER 68 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 8
AN 1998:730168 CAPLUS
DN 130:121688
ED Entered STN: 18 Nov 1998

TI ***Two*** - ***photon*** fluorescence excitation cross sections of biomolecular probes from 690 to 960 nm
AU Albota, Marius A.; Xu, Chris; Webb, Watt W.
CS School of Applied and Engineering Physics, Cornell University, Ithaca, NY, 14853, USA
SO Applied Optics (1998), 37(31), 7352-7356
CODEN: APOPAI; ISSN: 0003-6935
PB Optical Society of America
DT Journal
LA English
CC 9-5 (Biochemical Methods)
AB We report on ***two*** - ***photon*** fluorescence excitation (TPE) action cross sections for five widely used mol. fluorophores. Measurements were performed by use of ultrashort (.apprx. 100-fs) Ti:sapphire pulsed excitation over the range 690-960 nm. TPE spectra were obtained by comparison with a fluorescein calibration std. Large cross sections were found for the ***cyanine*** reagent Cy 3 (.apprx. 140 GM) and for Rhodamine 6G (.apprx. 150 GM), both at 700 nm [1 GM = 10-50 (cm4 s)/photon]. Several fluorophores show interesting and desirable blue shifts with respect to twice the one-photon absorption wavelength. Fluorophore fluorescence intensities showed no significant departure (.+-.4%) from quadratic illumination power dependence, indicating genuine ***two*** - ***photon*** processes. Implications of these measurements for ***two*** - ***photon*** laser-scanning microscopy are discussed.
ST biomol probe ***two*** ***photon*** fluorescence excitation; fluorophore ***two*** ***photon*** fluorescence excitation
IT Scanning microscopy
(laser scanning microscopy; ***two*** - ***photon*** fluorescence excitation cross sections of biomol. probes from 690 to 960 nm)
IT Fluorescent substances
(***two*** - ***photon*** fluorescence excitation cross sections of biomol. probes from 690 to 960 nm)
IT Laser induced fluorescence
(***two*** - ***photon*** ; ***two*** - ***photon*** fluorescence excitation cross sections of biomol. probes from 690 to 960 nm)
IT 989-38-8, Rhodamine 6G 146397-20-8, Cy 3
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(***two*** - ***photon*** fluorescence excitation cross sections of biomol. probes from 690 to 960 nm)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Demas, J; J Phys Chem 1971, V75, P991
(2) Denk, W; Science 1990, V248, P73 CAPLUS
(3) Goppert-Mayer, M; Ann Phys 1931, V9, P273 CAPLUS
(4) Guild, J; Appl Opt 1997, V36, P397
(5) Xu, C; J Opt Soc Am B 1996, V13, P481 CAPLUS
(6) Xu, C; Opt Lett 1995, V21, P2372
(7) Xu, C; Proc Natl Acad Sci 1996, V93, P10763 CAPLUS

L5 ANSWER 69 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:411176 CAPLUS
DN 129:96579
ED Entered STN: 08 Jul 1998
TI Highly active ***two*** - ***photon*** dyes: design, synthesis, and characterization toward application
AU Reinhardt, Bruce A.; Brott, Lawrence L.; Clarson, Stephen J.; Dillard, Ann G.; Bhatt, Jayprakash C.; Kannan, Ramamurthi; Yuan, Lixiang; He, Guang S.; Prasad, Paras N.
CS Polymer Branch WL/MLBP Materials Directorate, U. S. Air Force Research Laboratory, Wright-Patterson AFB, OH, 45433-7750, USA
SO Chemistry of Materials (1998), 10(7), 1863-1874
CODEN: CMATEX; ISSN: 0897-4756
PB American Chemical Society
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 74
AB A series of compds. with systematically varied mol. structures which exhibit very large effective ***two*** - ***photon*** cross sections

has been synthesized and characterized in soln. using a nonlinear transmission technique. The general structure of these compds. can be categorized into two basic structural families: acceptor/donor/donor/acceptor and donor/bridge/acceptor. This study attempts to det. certain mol. structure/effective ***two*** - ***photon*** absorption relationships by careful characterization and as a function of systematically varied changes in the org. structure of the dye mols. Such information can be useful in the design of more efficient ***two*** - ***photon*** dyes for imaging and power-limiting applications. The results of the study indicate that with the incorporation of certain combinations of structural elements, dyes can be synthesized which have greatly increased effective cross sections as high as 152.5 .times. 10-48 cm4 s/photon mol. in benzene soln. at 800 nm using 8-ns pulses. This value is orders of magnitude higher than com. available org. dyes measured at the same wavelength. Although the process is thought to involve a combination of ***two*** - ***photon*** absorption and excited state absorption phenomena, the information gathered from these new families of dyes has provided an important first step in producing improved materials for use in many different ***two*** - ***photon*** technol. application.

ST dye ***two*** ***photon*** synthesis

IT Dyes
(laser; prepn. of highly active 2-photon dyes)

IT ***Cyanine*** dyes
Fluorescent dyes
(prepn. of highly active 2-photon dyes)

IT 143084-55-3P 143084-56-4P 153846-91-4P 175922-78-8P, 2,7-Dibromo-9,9-didecyl-9H-fluorene 189367-54-2P, 2,7-Dibromo-9,9-dihexyl-9H-fluorene 197969-58-7P, 2,7-Dibromo-9,9-diethyl-9H-fluorene 202831-61-6P 202831-62-7P 202831-63-8P, 7-Bromo-9,9-didecyl-N,N-diphenyl-9H-fluoren-2-amine 202831-64-9P, 7-Bromo-9,9-diethyl-N,N-diphenyl-9H-fluoren-2-amine 202831-65-0P 202831-66-1P, 6-Bromo-N-phenyl-2-naphthylamine 202831-67-2P 209603-47-4P, 7-Bromo-9,9-dihexyl-N,N-diphenyl-9H-fluoren-2-amine 209603-51-0P 209603-54-3P 209603-55-4P 209603-58-7P 209603-60-1P, N-Phenyl-6-(4-pyridyl)-2-naphthylamine
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prepn. of highly active 2-photon dyes)

IT 129922-11-8P, 3,4-Bis(decyloxy)-2,5-bis(2-benzothiazolyl)thiophene 191667-13-7P 197314-30-0P 197969-53-2P, 3,3',4,4'-Tetrakis(decyloxy)-5,5'-bis(2-benzothiazolyl)-2,2'-bithiophene 197969-54-3P 197969-55-4P 197969-56-5P 197969-57-6P 209603-48-5P 209603-50-9P 209603-53-2P 209603-56-5P 209603-59-8P
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of highly active 2-photon dyes)

IT 62-53-3, Benzenamine, reactions 92-86-4, 4,4'-Dibromobiphenyl 100-43-6 100-69-6, 2-Vinylpyridine 112-29-8, Decyl bromide 137-07-5, 2-Mercaptoaniline 591-50-4, Iodobenzene 1822-66-8, Diethyl 3,4-dihydroxy-2,5-thiophenedicarboxylate 5856-89-3, Lithium diphenylamide 15231-91-1, 6-Bromo-2-naphthol 54663-78-4, 2-(Tributylstannyl)thiophene 124252-41-1, 4-(Tributylstannyl)pyridine 209603-62-3, Lithium bis(3-methoxyphenyl)amide
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prepn. of highly active 2-photon dyes)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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(2) Bhawalkar, J; Mol Cryst Liq Cryst S&T, Sect B: Nonlinear Opt 1996, V16(2), P95 CAPLUS
(3) Bhawalkar, J; Polymer 1997, V38(17), P4551 CAPLUS
(4) Bhawalkar, J; Rep Prog Phys 1996, V59, P1041 CAPLUS
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(16) Zhao, M; Chem Mater 1990, V2, P670 CAPLUS

L5 ANSWER 70 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:548136 CAPLUS
DN 129:267511
ED Entered STN: 28 Aug 1998
TI Enhancement of the molecular hyperpolarizability by a supramolecular amylose-dye inclusion complex, studied by hyper-Rayleigh scattering with fluorescence suppression
AU Clays, Koen; Olbrechts, Geert; Munters, Tom; Persoons, Andre; Kim, Oh-Kil; Choi, Ling-Siu
CS Department of Chemistry, Center for Research on Molecular Electronics and Photonics, Laboratory of Chemical and Biological Dynamics, University of Leuven, Louvain, B-3001, Belg.
SO Chemical Physics Letters (1998), 293(5,6), 337-342
CODEN: CHPLBC; ISSN: 0009-2614
PB Elsevier Science B.V.
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The first hyperpolarizability .beta. of a free hemicyanine dye and a homolog dye included in a supramol. complex were detd. by hyper-Rayleigh scattering. Since the inclusion complex is fluorescent, high-frequency demodulation of the time-delayed ***multiphoton*** fluorescence was used to retrieve a fluorescence-free inherent value for its first hyperpolarizability. The free dye does not exhibit fluorescence; the inclusion induces fluorescence with a lifetime of 4.8 .+-. 0.1 ns; and the inclusion complex has a fluorescence-free value for its dispersion-free first hyperpolarizability .beta.0 of approx. twice that for the free dye ((200 .+-. 5).times.10-30 vs. (100 .+-. 10).times.10-30 esu). The enhanced polar orientation of this complex in thin films, and better thermal and mech. stability, together with this increase in mol. nonlinearity confirm inclusion as a way to engineer efficient macroscopic arrangements for nonlinear optics.
ST ***cyanine*** dye amylose inclusion complex hyperpolarizability
IT ***Cyanine*** dyes
(hemicyanine; hyperpolarizability of supramol. inclusion complex of hemicyanine dye and amylose using hyper-Rayleigh scattering)
IT Laser radiation scattering
(hyperpolarizability of supramol. inclusion complex of hemicyanine dye and amylose using hyper-Rayleigh scattering)
IT Inclusion compounds
RL: PRP (Properties)
(hyperpolarizability of supramol. inclusion complex of hemicyanine dye and amylose using hyper-Rayleigh scattering)
IT Optical hyperpolarizability
(of supramol. inclusion complex of hemicyanine dye and amylose using hyper-Rayleigh scattering)
IT 9005-82-7, Amylose 103998-45-4, 4-[4(Dimethylamino)styryl]-1-docosyl pyridinium bromide
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(hyperpolarizability of supramol. inclusion complex of hemicyanine dye and amylose using hyper-Rayleigh scattering)
IT 99025-68-0
RL: PRP (Properties)
(hyperpolarizability using hyper-Rayleigh)
IT 178752-39-1
RL: PRP (Properties)
(hyperpolarizability using hyper-Rayleigh scattering)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Boutton, C; Chem Phys Lett 1998, V286, P101 CAPLUS
(2) Clays, K; Phys Rev Lett 1991, V66, P2980 CAPLUS
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(5) Kim, O; J Am Chem Soc 1996, V118, P12220 CAPLUS
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(8) Marowsky, G; Chem Phys Lett 1988, V147, P420 CAPLUS
(9) Olbrechts, G; Rev Sci Instrum 1998, V69, P2233 CAPLUS
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L5 ANSWER 71 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:242995 CAPLUS
DN 130:358972
ED Entered STN: 21 Apr 1999
TI High-frequency demodulation of ***multi*** - ***photon*** fluorescence in hyper-Rayleigh scattering
AU Olbrechts, Geert; Munters, Tom; Clays, Koen; Persoons, Andre
CS Laboratory of Chemical and Biological Dynamics, Center for Research on Molecular Electronics and Photonics, Department of Chemistry, University of Leuven, Louvain, B-3--1, Belg.
SO Proceedings of SPIE-The International Society for Optical Engineering (1998), 3474(Second-Order Organic Nonlinear Optics), 103-114
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB Femtosecond hyper-Rayleigh scattering (HRS) was used for the suppression of ***multi*** - ***photon*** fluorescence contributions to the apparent HRS signal. The intrinsic high harmonic content of the femtosecond pulse was used as a high frequency amplitude modulation source. Due to the nonzero fluorescence lifetime, a high amplitude modulation frequency will result in an amplitude demodulated and phase shifted fluorescence signal. At very high modulation frequencies, the fluorescence signal becomes completely demodulated and only the inherent HRS signal will remain. Exptl. verification was obtained by the fluorescence suppression for a known centrosym. fluorophore, 9,10-diphenylanthracene, added to a soln. of a well characterized nonlinear optical (NLO) chromophore, crystal violet (CV+). A comparison also was made between the first hyperpolarizability value .beta. of a nonfluorescent ionic hemicyanine dye (DASPC22+) and the .beta. value of the fluorescent inclusion complex of the dye incorporated in an amylose matrix. The inherent fluorescence-free .beta. value for the complex appeared to be twice [(200 .+-. 5)x10-30 esu] the value for the dye itself [(100 .+-. 10)x10-30 esu].
ST hyper Rayleigh scattering ***multiphoton*** fluorescence suppression; hyperpolarizability measurement fluorescence suppression
IT Nonlinear optical materials
Optical hyperpolarizability
(fluorescence-free hyperpolarizability using femtosecond hyper-Rayleigh scattering)
IT ***Cyanine*** dyes
(hemicyanine; hyper-Rayleigh scattering of hemicyanine dye and inclusion complex with amylose)
IT Inclusion compounds
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(hyper-Rayleigh scattering of hemicyanine dye and inclusion complex with amylose)
IT Laser radiation scattering
Laser spectroscopy
(hyper-Rayleigh; ***multiphoton*** fluorescence suppression in femtosecond hyper-Rayleigh scattering)
IT Fluorescence decay
(***multiphoton*** fluorescence suppression in femtosecond hyper-Rayleigh scattering)
IT Laser induced fluorescence
(***multiphoton*** ; suppression in femtosecond hyper-Rayleigh scattering)
IT Laser radiation
(pulsed; ***multiphoton*** fluorescence suppression in femtosecond hyper-Rayleigh scattering)
IT Laser induced fluorescence
(***two*** - ***photon*** ; suppression in femtosecond hyper-Rayleigh scattering)

IT 155887-97-1
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(hyper-Rayleigh scattering of hemicyanine dye and inclusion complex with amylose)
IT 9005-82-7, Amylose
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(hyper-Rayleigh scattering of hemicyanine dye and inclusion complex with amylose)
IT 103998-45-4
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(hyper-Rayleigh scattering of hemicyanine dye and inclusion complex with amylose)
IT 1499-10-1, 9,10-Diphenylanthracene
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(***multiphoton*** fluorescence suppression in femtosecond hyper-Rayleigh scattering)
IT 548-62-9, Crystal violet
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(***multiphoton*** fluorescence suppression in femtosecond hyper-Rayleigh scattering of diphenylanthracene in CV soln.)
RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Alcala, J; Anal Instrum 1985, V14, P224
(2) Clays, K; J Nonlin Opt Phys Mat 1996, V5(1), P59 CAPLUS
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L5 ANSWER 72 OF 92 INSPEC (C) 2006 IEE on STN
AN 1997:5592517 INSPEC DN A9713-4265M-008
TI Increase and saturation of the third order hyperpolarizabilities in homologous series of symmetric ***cyanines*** .

AU Werncke, W.; Pfeiffer, M.; Johr, T.; Lau, A. (Max-Born-Inst. fur Nichtlineare Optik und Kerzzeitspektroscopie, Berlin, Germany); Grahn, W.; Johannes, H.-H.; Dahne, L.

SO Chemical Physics (1 April 1997) vol.216, no.3, p.337-47. 40 refs.
Doc. No.: S0301-0104(97)00029-3
Published by: Elsevier
Price: CCCC 0301-0104/97/$17.00
CODEN: CMPHC2 ISSN: 0301-0104
SICI: 0301-0104(19970401)216:3L.337:ISTO;1-E
DT Journal
TC Experimental
CY Netherlands

LA English
AB The chain length dependencies of the static third order hyperpolarizabilities gamma STAT for the homologous series of benzthiacyanine dyes and of simple bis(dimethylamino) ***methine*** dyes were extrapolated from nondegenerate four wave mixing dispersion measurements and compared with theoretical values. Up to the heptamethine the pi -electron contributions gamma STATpi , of both homologous series show a similar increase with the growing number of pi -electrons (N) of the chain (gamma STATpi -N8+or-2). However, the absolute values of the benzthiacyanines are considerable higher than of the corresponding gamma STATpi =-850*10-36 esu were determined. For the first time a saturation of the nonlinearity could be observed experimentally in the series of benzthiacyanines for the longest chain (benzthiacyanine nonamethine).
CC A4265M Multiwave mixing; A3520M Molecular electric and magnetic moments (and derivatives), polarizability, and magnetic susceptibility
CT MULTIWAVE MIXING; ORGANIC COMPOUNDS; POLARISABILITY
ST static third order hyperpolarizabilities; hyperpolarizability saturation; homologous series; ***symmetric cyanines*** ; chain length dependencies; benzthiacyanine dyes; ***bis(dimethylamino)methine dyes*** ; nondegenerate four wave mixing dispersion measurements; pi -electron contributions; heptamethine; pi -electrons; nonlinearity saturation; benzthiacyanine nonamethine; molecular structure; coherent Raman spectra; line shape analysis; electronic hyperpolarisability; third order hyperpolarisability dispersion; one photon contribution; ***electronic*** *** two-photon contribution*** ; CARS

L5 ANSWER 73 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:294918 CAPLUS
DN 127:42100
ED Entered STN: 09 May 1997
TI Study of one- ***photon*** writing with ***two*** - ***photon*** reading in spiropyran films
AU Zhao, Ticheng; Yan, Jun; Duan, Hailan; Qin, Lijuan; Wang, Zugeng
CS Dep. Physics, East China Teacher's University, Shanghai, 200062, Peop. Rep. China
SO Zhongguo Jiguang (1996), A23(8), 751-755
CODEN: ZHJIDO; ISSN: 0258-7025
PB Kexue
DT Journal
LA Chinese
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
AB The IR ***two*** - ***photon*** excitation visible fluorescence probing induced by UV signal on optoactive material spiropyran was studied. Some useful information about signal writing into and reading out of such kind of storage materials was obtained.
ST spiropyran ***merocyanine*** photon excited fluorescence
IT Fluorescence
(IR ***two*** - ***photon*** excitation fluorescence induced by UV signal on optoactive spiropyran films)
IT Optical recording
(one- ***photon*** writing with ***two*** - ***photon*** reading in spiropyran films)
IT Spiro compounds
Spiro compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(pyrans; one- ***photon*** writing with ***two*** - ***photon*** reading in spiropyran films)
IT Heterocyclic compounds
Heterocyclic compounds
RL: TEM (Technical or engineered material use); USES (Uses)
(spiropyrans; one- ***photon*** writing with ***two*** - ***photon*** reading in spiropyran films)

L5 ANSWER 74 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 9
AN 1996:748279 CAPLUS
DN 126:145370
ED Entered STN: 20 Dec 1996
TI Dispersion of the third-order susceptibility of a ***cyanine*** dye measured by coherent anti-Stokes Raman scattering
AU Johr, T.; Werncke, W.; Daehne, L.; Pfeiffer, M.; Lau, A.

CS Max-Born-Institut Nichtlineare Optik Kurzzeitspektroskopie, Berlin, D-12489, Germany
SO Applied Physics B: Lasers and Optics (1996), 63(6), 641-647
CODEN: APBOEM; ISSN: 0946-2171
PB Springer
DT Journal
LA English
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 73
AB The dispersion of the 3rd-order susceptibility of the ***cyanine*** dye bis(dimethylamino)heptamethinium chloride was measured by coherent anti-Stokes Raman scattering (CARS) over a wide wavelength range (530-830 nm). Large neg. values of the real part of the 2nd-order hyperpolarizability were obsd. The data were analyzed with the help of theor. calcns. based on a perturbative approach for the nonlinearities. The dispersion behavior of the 3rd-order susceptibility is governed by the 1st excited electronic state and, to a lesser extent, by an electronic 2-photon resonance at .apprxeq.600 nm.
ST third order susceptibility ***cyanine*** dye CARS; second order hyperpolarizability ***cyanine*** dye CARS; nonlinear optical property ***cyanine*** dye CARS
IT CARS spectra
(dispersion of 3rd-order susceptibility measured by)
IT ***Cyanine*** dyes
(dispersion of 3rd-order susceptibility measured by CARS of)
IT Third-order nonlinear optical susceptibility
(dispersion of 3rd-order susceptibility measured by CARS of a ***cyanine*** dye)
IT Excited electronic state
(governing the dispersion behavior of 3rd-order susceptibility of a ***cyanine*** dye)
IT Optical hyperpolarizability
(second-order; dispersion of 3rd-order susceptibility measured by CARS of a ***cyanine*** dye also observing)
IT Resonant transition
(***two*** - ***photon*** ; governing the dispersion behavior of 3rd-order susceptibility of a ***cyanine*** dye to a lesser extent)
IT 2219-20-7, Bis-(dimethylamino)-heptamethinium chloride
RL: PRP (Properties)
(dispersion of 3rd-order susceptibility measured by CARS of ***cyanine*** dye)

L5 ANSWER 75 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:946448 CAPLUS
DN 124:71337
ED Entered STN: 24 Nov 1995
TI Mechanisms of spectral sensitization of silver halides: role of sensitizing dye complexation
AU Sahyun, M. R. V.; Sharma, D. K.; Serpone, N.
CS Dry Imaging Technol. Cent., St. Paul, MN, 55144, USA
SO Journal of Imaging Science and Technology (1995), 39(5), 377-85
CODEN: JIMTE6; ISSN: 1062-3701
PB IS&T--The Society for Imaging Science and Technology
DT Journal
LA English
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB We have obsd. concurrent processes of photoexcited dye deactivation and silver(0) cluster formation in real time under conditions of laser flash photolysis of a ***merocyanine*** dye adsorbed to an AgBr nanosol. To our knowledge this is the first time such a comprehensive view of the process of spectral sensitization has been obtained exptl. Spectral sensitization of AgBr is apparently ***biphotonic*** under our conditions; this result, along with obsd. kinetics of dye ground state re-population and of silver(0) cluster growth, is consistent with Mitchell's mechanism of spectral sensitization, but not with single-electron transfer or radical pair mechanisms. Control expts. revealed a modicum of photolytic reactivity for undyed nanosol with 2.35 eV photons and suggested operation of an Auger mechanism of photoelectron generation. In this case amplified stimulated emission was obsd. from photogenerated silver clusters, Agn0, (or a byproduct) at photon energies

comparable to those that produce the Herschel effect in conventional photog. We speculatively est. nuclearity of the silver clusters produced under conditions of our expts. as n = ca. 12.

ST photog spectral sensitization mechanism dye complexation; photolysis dye sensitizer adsorbate silver bromide

IT Adsorption
(Freundlich isotherm; photolysis of ***merocyanine*** spectral sensitizer dye adsorbed on silver bromide nanosol.)

IT Adsorbed substances
Kinetics of photolysis
(laser photolysis study of mechanism of photog. spectral sensitization by ***merocyanine*** dye)

IT Ultraviolet and visible spectra
(of transients; laser photolysis study of mechanism of photog. spectral sensitization by ***merocyanine*** dye)

IT Photolysis
(flash, of ***merocyanine*** spectral sensitizer dye adsorbed on silver bromide nanosol.)

IT Photographic sensitizers
(spectral, laser photolysis study of mechanism of photog. spectral sensitization by ***merocyanine*** dye)

IT 7440-22-4D, Silver, clusters
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(laser photolysis study of mechanism of photog. spectral sensitization by ***merocyanine*** dye)

IT 25962-03-2
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(laser photolysis study of mechanism of photog. spectral sensitization by ***merocyanine*** dye)

IT 7785-23-1, Silver bromide
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photolysis of ***merocyanine*** spectral sensitizer dye adsorbed on silver bromide nanosol.)

L5 ANSWER 76 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN

AN 1995:474196 CAPLUS

DN 122:301555

ED Entered STN: 08 Apr 1995

TI Determination of ***two*** -pulse ***photon*** echoes from solvent spectral densities

AU Arnett, D. C.; Vohringer, P.; Westervelt, R. A.; Feldstein, M. J.; Scherer, N. F.

CS Department Chemistry, University Pennsylvania, Philadelphia, PA, 19104-6323, USA

SO Springer Series in Chemical Physics (1994), 60(Ultrafast Phenomena IX), 482-3
CODEN: SSCPDA; ISSN: 0172-6218

DT Journal

LA English

CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB Photon echo measurement of a ***cyanine*** dye chromophore in MeCN solns. are reported. The measured spectral d. was used to calc. the 2-pulse photon echo signal.

ST photon echo solvent spectral density

IT Dyes, ***cyanine***
(detn. of ***two*** -pulse ***photon*** echoes from solvent spectral densities for ***cyanine*** dye soln.)

IT ***Photon***
(detn. of ***two*** -pulse ***photon*** echoes from solvent spectral densities for ***cyanine*** dye soln. in)

IT 75-05-8, Acetonitrile, uses
RL: NUU (Other use, unclassified); USES (Uses)
(detn. of ***two*** -pulse ***photon*** echoes from solvent spectral densities for ***cyanine*** dye soln. in)

IT 19764-96-6, HITCI
RL: PRP (Properties)
(detn. of ***two*** -pulse ***photon*** echoes from solvent spectral densities for soln. contg.)

L5 ANSWER 77 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1995:180015 CAPLUS
DN 122:66781
ED Entered STN: 11 Nov 1994
TI Contribution of ***two*** - ***photon*** states to third order optical nonlinearities
AU Singer, Kenneth D.; Andrews, James H.
CS Department Physics, Case Western Reserve University, Cleveland, OH, 44106-7079, USA
SO Condensed Matter News (1994), 3(4), 7-13
CODEN: CMAWE8; ISSN: 1056-7046
DT Journal; General Review
LA English
CC 73-0 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB A review with 20 refs. focusing on the role of ***two*** - ***photon*** excited states in detg. the third order optical nonlinearity of mols. Polyenes and ***cyanines*** are presented as model compds. to demonstrate optical nonlinearity.
ST review ***two*** ***photon*** excited state; third order optical nonlinearity review
IT Optical nonlinear property
(Contribution of ***two*** - ***photon*** states to third order optical nonlinearities)
IT Dyes, ***cyanine***
(in study of Contribution of ***two*** - ***photon*** states to third order optical nonlinearities)
IT Alkenes, properties
RL: PRP (Properties)
(poly-, in study of Contribution of ***two*** - ***photon*** states to third order optical nonlinearities)

L5 ANSWER 78 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 10
AN 1992:416715 CAPLUS
DN 117:16715
ED Entered STN: 11 Jul 1992
TI A simplified three-level model describing the molecular third-order nonlinear optical susceptibility
AU Dirk, Carl W.; Cheng, Lap Tak; Kuzyk, Mark G.
CS Dep. Chem., Univ. Texas, El Paso, TX, 79968-0513, USA
SO International Journal of Quantum Chemistry (1992), 43(1), 27-36
CODEN: IJQCB2; ISSN: 0020-7608
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB A simplified three-level model for .gamma., the mol. third-order nonlinear optical susceptibility, is presented and discussed. The perturbation theory-based approach suggests that there are three primary avenues to optimizing mol. four-wave mixing susceptibilities and that with each of these is assocd. a particular class of mol. electronic structures. The three electronic structure classes consist of (1) conjugated donor-acceptor dipolar mols. with a large second-order susceptibility, .beta.; (2) even-member conjugated chains such as -enes, -ynes, and -ene-ynes with large ***two*** - ***photon*** dominated susceptibilities; and (3) charged odd-member conjugated chaines with large linear absorption dominated third-order susceptibilities such as squaryliums (perhaps, more generally, the ***polymethine*** dyes). Classes (1) and (2) have been known and investigated in the past, while recent results of ours suggest the existence of the third and perhaps final class.
ST third order nonlinear optical susceptibility mol; org compd third order susceptibility
IT Dyes, ***cyanine***
(squarylium, third-order susceptibility of, model for)
IT Organic compounds, properties
RL: PRP (Properties)
(third-order susceptibility of, model for)
IT Optical nonlinear property
(susceptibility, third-order, of org. compds., model for)
IT 68842-68-2 87286-91-7

RL: PRP (Properties)
(third-order susceptibility of, model for)

L5 ANSWER 79 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1991:570625 CAPLUS
DN 115:170625
ED Entered STN: 18 Oct 1991
TI ***Two*** - ***photon*** radical-photoinitiator system based on iodinated benzospiropyrans
AU Lee, Suk Kyu; Neckers, D. C.
CS Cent. Photochem. Sci., Bowling Green State Univ., Bowling Green, OH, 43403, USA
SO Chemistry of Materials (1991), 3(5), 858-64
CODEN: CMATEX; ISSN: 0897-4756
DT Journal
LA English
CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35
AB ***Two*** - ***photon*** photopolymns. of solns. of benzospiropyrans (BSPs) and N-phenylglycine in trimethyloltripropane triacrylate (TMPTA) were carried out using both UV and visible lasers. With UV irradn. benzospiropyran solns. generate intensely colored ***merocyanines*** and subsequent He/Ne laser irradn. of the colored solns. give polymers. Benzyldimethyliodomethoxynitrobenzospiropyran (BIMNBSP 9) was the most photosensitive 2-photon initiator among 4 iodinated BSPs.
ST iodinated benzospiropyran photoinitiator polymn; stereolithog iodinated benzospiropyran photoinitiator polymn; photochromic iodinated benzospiropyran photoinitiator polymn; radical photopolymn iodinated ***merocyanine*** initiator lithog
IT Photochromic substances
(iodinated benzospiropyrans, as photoinitiators for 2-photon photopolymerizable systems for stereolithog.)
IT Polymerization
(photochem., 2-photon radical-photoinitiator system based on iodinated benzospiropyrans for)
IT Electron exchange
(photochem., in 2-photon radical-photoinitiator system for stereolithog. based on iodinated benzospiropyrans)
IT Photoimaging compositions and processes
(photopolymerizable, photoinitiator system based on iodinated benzospiropyrans for, for stereolithog.)
IT Lithography
(stereo-, photoinitiator system based on iodinated benzospiropyrans for)
IT 15625-89-5
RL: USES (Uses)
(photopolymerizable compn. contg. phenylglycine and iodinated benzospiropyran photoinitiators and, for stereolithog.)
IT 103-01-5, N-Phenylglycine
RL: USES (Uses)
(photopolymerizable compn. contg. trimethyloltripropane triacrylate and iodinated benzospiropyran photoinitiator and, for stereolithog.)
IT 98883-30-8 100239-68-7 135823-64-2 135823-65-3
RL: USES (Uses)
(photopolymerizable compn. contg. trimethyloltripropane triacrylate and photoinitiators of phenylglycine and, for stereolithog.)

L5 ANSWER 80 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1988:46173 CAPLUS
DN 108:46173
ED Entered STN: 06 Feb 1988
TI S0-S1 ***two*** ***photon*** absorption dynamics of organic dye solutions
AU Penzkofer, A.; Leupacher, W.
CS Naturwiss. Fak. II - Phys., Univ. Regensburg, Regensburg, D-8400, Fed. Rep. Ger.
SO Optical and Quantum Electronics (1987), 19(6), 327-49
CODEN: OQELDI; ISSN: 0306-8919
DT Journal
LA English
CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 41

AB The ***two*** - ***photon*** absorption cross sections and excited-state absorption cross sections of the dyes Rhodamine 6G, Methylene Blue, and fuchsin dissolved in MeOH, and of the dyes Safranine T, 1,3,3,1',3',3'-hexamethylindocarbocyanine iodide, and 1,3,1',3'-tetramethyl-2,2'-dioxopyrimidi-6,6'-carboxyanine hydrogen sulfate dissolved in (Fe3C)2CHOH were detd. The excitation was achieved with ps light pulses of a passively mode-locked Nd-glass laser (.lambda.L = 1.054 .mu.m). The influence of amplified spontaneous emission on the 2-photon absorption dynamics was analyzed.

ST dye ***two*** ***photon*** absorption dynamics

IT Laser radiation
(absorption of ***two*** ***photons*** of, dynamics of, in dye solns.)

IT ***Photon***
(absorption of ***two*** , by org. dye solns., dynamics of)

IT Fluorescence
Ultraviolet and visible spectra
(of dyes)

IT Dyes
Dyes, ***cyanine***
(***two*** ***photon*** absorption dynamics of solns. of)

IT Optical absorption
(***two*** - ***photon*** , of dye solns., dynamics of)

IT 61-73-4, Methylene blue 477-73-6, Safranine T 632-99-5, Fuchsin 989-38-8, Rhodamine 6G 25470-94-4, 1,3,3,1',3',3'-Hexamethylindocarbocyanine iodide 109872-07-3
RL: PRP (Properties)
(***two*** ***photon*** absorption dynamics of solns. of)

L5 ANSWER 81 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 11
AN 1986:195630 CAPLUS
DN 104:195630
ED Entered STN: 01 Jun 1986
TI A theoretical investigation of the one- and ***two*** - ***photon*** properties of porphyrins
AU Masthay, M. B.; Findsen, L. A.; Pierce, B. M.; Bocian, D. F.; Lindsey, J. S.; Birge, R. R.
CS Dep. Chem., Carnegie-Mellon Univ., Pittsburgh, PA, 15213, USA
SO Journal of Chemical Physics (1986), 84(7), 3901-15
CODEN: JCPSA6; ISSN: 0021-9606
DT Journal
LA English
CC 73-1 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB The one- and ***two*** - ***photon*** properties of free base porphine, free base porphine dianion, and the 2,4-substituted diformyl and divinyl analogs of these mols. were studied by using a semiempirical SCF-MO formalism (CNDO-.pi.-SCF-MO-PSDCI) including extensive single and double CI. Strongly 2-photon allowed states are predicted to lie in the Soret region as well as in the region between the Soret and visible bands. A no. of the 2-photon allowed states in the Soret region are predicted to have 2-photon absorptivities exceeding 100 .times. 10-50 cm4-s-mol-1-photon-1. The calcns. indicate that the visible (Q) states are well characterized by the 4 orbital model, whereas the Soret (B) states contain significant contributions from configurations comprised of other orbitals. The inclusion of extensive double CI significantly reduces the Soret-visible (B-Q) splitting, increases the Qx-Qy splitting, and yields calcd. oscillator strengths for the Q bands in better agreement with expt. than values calcd. using single CI alone. The effects of conjugation into the porphyrin macrocycle are predicted to be more significant than inductive effects on macrocycle .pi. orbitals due to substituent polarity. The .ltbbrac.Qx|r|S0.rtbbrac. and .ltbbrac.Qy|r|S0.rtbbrac. transition moment vectors are predicted to lie approx. through adjacent pyrrole rings in 2- and 4-monoformyl free base porphine dianions and approx. through adjacent ***methine*** bridges in 2,4-diformyl free base porphin dianion.

ST porphyrin one ***two*** ***photon*** property

IT Porphyrins
RL: PRP (Properties)
(1- and 2-photon properties of)

IT Molecular orbital
(CNDO, SCF, of porphyrins)
IT Optical absorption
(by porphyrins)
IT Energy level transition
(moment of, of porphyrins)
IT Oscillator strength
(of porphyrins)
IT ***Photon***
(processes of one or ***two*** , in porphorines)
IT 101-60-0 24869-67-8 30882-36-1 65799-73-7 101973-07-3
101996-60-5 102530-25-6
RL: PRP (Properties)
(1- and 2-photon properties of)

L5 ANSWER 82 OF 92 INSPEC (C) 2006 IEE on STN
AN 1987:2996344 INSPEC DN A87129821
TI Double resonances in inelastic three-photon light scattering by ***polymethine*** -dye molecules.
AU Baranov, A.V.; Bobovich, Ya.S.; Vasilenko, N.P.
SO Optics and Spectroscopy (Oct. 1986) vol.61, no.4, p.490-3. 7 refs.
Price: CCCC 0030-400X/86/100490-04$05.00
CODEN: OPSUA3 ISSN: 0030-400X
Translation of: Optika i Spektroskopiya (Oct. 1986) vol.61, no.4, p.780-5.
7 refs.
CODEN: OSFMA3 ISSN: 0030-4034
DT Journal; Translation Abstracted
TC Experimental
CY USSR; United States
LA English
AB The first experimental observation of an increase in intensity of inelastic three-photon scattering (ITPS) by ***polymethine*** dye molecules, absorbed by particles of silver colloid, during simultaneous resonance of the ground and doubled frequencies of the exciting radiation with the actual levels of the molecules is discussed. The intensity increase is well described by the vibronic theory of ITPS.
CC A3320E Infrared spectra; A3320K Visible spectra; A3380K Multiphoton processes; A6845B Sorption equilibrium
CT ADSORBED LAYERS; COLLOIDS; INFRARED SPECTRA OF ORGANIC MOLECULES AND SUBSTANCES; ***MULTIPHOTON*** SPECTRA; ORGANIC COMPOUNDS; SILVER; VISIBLE AND ULTRAVIOLET SPECTRA OF ORGANIC MOLECULES AND SUBSTANCES
ST visible spectra; IR spectra; inelastic three-photon light scattering; ***polymethine-dye molecules*** ; vibronic theory; Ag colloids
CHI Ag sur, Ag el
ET Ag

L5 ANSWER 83 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 12
AN 1984:111475 CAPLUS
DN 100:111475
ED Entered STN: 12 May 1984
TI Short-wavelength fluorescence caused by sequential ***two*** - ***photon*** excitation of some ***cyanine*** dyes: effect of solvent viscosity on the quantum yields
AU Kasatani, Kazuo; Kawasaki, Masahiro; Sato, Hiroyasu
CS Fac. Eng., Mi'e Univ., Tsu, 514, Japan
SO Chemical Physics (1984), 83(3), 461-9
CODEN: CMPHC2; ISSN: 0301-0104
DT Journal
LA English
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22
AB Short-wavelength (SW) fluorescence of some ***cyanine*** dyes caused by sequential 2-photon excitation was studied. The fluorescence quantum yield shows a significant dependence on the solvent viscosity, but only a small dependence on temp. This reveals the dynamic character of the emitting state: much lower intramol. barrier and larger solute-solvent viscous drag compared to the S1 state in the mol. conformational change which is important as a radiationless decay channel.
ST fluorescence ***cyanine*** dye solvent viscosity
IT ***Photon***
(fluorescence excitation by ***two*** , of ***cyanine*** dyes,

solvent viscosity effects on quantum yield of)
IT Dyes, ***cyanine***
(fluorescence of, solvent viscosity effects on quantum yield of)
IT Fluorescence
(of ***cyanine*** dyes, solvent viscosity effects on quantum yield of ***two*** - ***photon*** excited)
IT Viscosity
(solvent, effects on quantum yield of ***two*** - ***photon*** excited fluorescence of ***cyanine*** dyes)
IT 64-85-7P 514-73-8P 2197-01-5P 3071-70-3P 15185-43-0P 37069-76-4P
RL: PRP (Properties); PREP (Preparation)
(fluorescence of, solvent viscosity effects on quantum yield of)

L5 ANSWER 84 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1984:471975 CAPLUS
DN 101:71975
ED Entered STN: 01 Sep 1984
TI Picosecond spectroscopic study of the influence of the solvent on the photoisomerization and relaxation of a streptocyanine dye
AU Rentsch, S. K.; Gadonas, R.; Piskarskas, A.
CS Dep. Phys., Friedrich-Schiller-Univ. Jena, Jena, DDR-6900, Ger. Dem. Rep.
SO Chemical Physics Letters (1984), 104(2-3), 235-9
CODEN: CHPLBC; ISSN: 0009-2614
DT Journal
LA English
CC 22-6 (Physical Organic Chemistry)
Section cross-reference(s): 41
AB The photophysics of bis(dimethylamino)heptamethine perchlorate dissolved in alcs. is examd. The absorption difference spectrum exhibits S1-Sn absorption, S0-S1 band bleaching, induced fluorescence and, after a delay upon optical excitation, photoisomer absorption. The S1 state depletion proceeds exponentially. Ground state recovery curves indicate a no. of nonrelaxed mols. which undergo photoisomerization. Photoisomer formation was evidenced by an increasing photoisomer absorption. All processes proceed more slowly in more viscous solvents. The isomerization quantum yield is independent of solvent viscosity.
ST ***multiphoton*** absorption streptocyanine; UV ***multiphoton*** ; fluorescence streptocyanine; photoisomerization kinetics streptocyanine solvent effect; mechanism photoisomerization streptocyanine solvent effect
IT Optical pumping
(bleaching by, of streptocyanine dye)
IT Fluorescence
(of streptocyanine dye)
IT Relaxation
(of streptocyanine dye, solvent effect on)
IT Solvent effect
(on photoisomerization and relaxation of streptocyanine dye)
IT Kinetics of isomerization
(photochem., of streptocyanine dye, solvent effects on)
IT Dyes, ***cyanine***
(streptocyanine, photoisomerization and relaxation of, solvent effects on)
IT Energy level excitation
(electronic, ***multiphoton*** , of streptocyanine dye)
IT Ultraviolet and visible spectra
(***multiphoton*** , of streptocyanine dye)
IT Isomerization
(photochem., of streptocyanine dye, mechanism of, solvent effects and)
IT 4030-58-4
RL: PRP (Properties)
(photoisomerization and relaxation of, solvent effect on)

L5 ANSWER 85 OF 92 INSPEC (C) 2006 IEE on STN
AN 1983:2049402 INSPEC DN A83050654; B83030528
TI Dye stability under excimer-laser pumping. I. Method and modelling for infrared dyes.
AU Antonov, V.S.; Hohla, K.L. (Lambda Phys., Gottingen, West Germany)
SO Applied Physics B (Photophysics and Laser Chemistry) (March 1983) vol.B30, no.3, p.109-16. 17 refs.
CODEN: APPCDL ISSN: 0721-7269
DT Journal
TC Theoretical; Experimental

CY Germany, Federal Republic of
LA English
AB The stability of ***polymethine*** dyes under XeCl laser excitation has been investigated. (For these dyes emitting in the IR the difference between absorbed and emitted photoenergy is 2 eV.) The stability was measured in an amplifier device operating in the saturated regime. While the influence on dye concentration is negligible, the fluence dependence shows the importance of ***two*** ***photon*** absorptions. A measure for the stability is the number of photons which can be emitted per dye molecule before the dye solution has degraded to 50% of the initial value. This value is in the range of 150-280. The stability is clearly related to the formation of photoproducts absorbing at the pump and the laser wavelength. A model starting from the change in the dye solution absorption spectra is in very good agreement with the observed energy decays.
CC A3380B Level crossing and optical pumping; A3380K Multiphoton processes; A4255G Excimer lasers; A4255M Lasing action in liquids and organic dyes; B4320E Liquid lasers and organic dye lasers
CT DYE LASERS; LASER FREQUENCY STABILITY; OPTICAL PUMPING; ORGANIC COMPOUNDS; ***TWO*** - ***PHOTON*** SPECTRA
ST dye stability; excimer-laser pumping; infrared dyes; ***polymethine*** *** dyes*** ; XeCl laser excitation; amplifier device; saturated regime; dye concentration; fluence dependence; ***two photon absorptions*** ; photoproducts; dye solution absorption spectra
ET I; Cl*Xe; XeCl; Xe cp; cp; Cl cp

L5 ANSWER 86 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1982:526873 CAPLUS
DN 97:126873
ED Entered STN: 12 May 1984
TI Photophysical studies of ***cyanine*** dyes. Part IV. Rigidity, photoisomerization and laser effect
AU Lougnot, Daniel Joseph; Brunero, Philippe; Fouassier, Jean Pierre; Faure, Jean
CS Lab. Photochim. Gen., Ec. Natl. Super. Chim., Mulhouse, 68093, Fr.
SO Journal de Chimie Physique et de Physico-Chimie Biologique (1982), 79(4), 343-9
CODEN: JCPBAN; ISSN: 0021-7689
DT Journal
LA French
CC 22-10 (Physical Organic Chemistry)
Section cross-reference(s): 41, 73
AB The physiochem. parameters relating to the photoisomerization of ***cyanine*** dyes were examd. and the mechanism was detd. The diagram of the excited electronic states of the isomers was also detd. and the activation energy for each stage was detd. The effect of ***polymethine*** chain rigidity upon the laser properties of these dyes is discussed and is related to their usefulness in pulsed lasers.
ST photoisomerization ***cyanine*** dye mechanism; laser pulsed ***cyanine*** dye; UV ***cyanine*** dye; fluorescence ***cyanine*** dye
IT Potential energy and function
(for photoisomerization of ***cyanine*** dyes, laser properties in relation to)
IT Fluorescence
Ultraviolet and visible spectra
(of ***cyanine*** dyes)
IT Optical pumping
(of ***cyanine*** dyes, photoisomerization and)
IT Conformation and Conformers
(of ***cyanine*** dyes, photoisomerization in relation to)
IT Solvent effect
(on energy level transitions and photoisomerization of ***cyanine*** dyes)
IT Dyes, ***cyanine***
(photoisomerization and UV and fluorescence of, laser properties in relation to)
IT Lasers
(pulsed, ***cyanine*** dyes for, photoisomerization and fluorescence in relation to)
IT Isomerization
(cis-trans, photochem., of ***cyanine*** dyes, mechanism of)

IT Energy level excitation
(electronic, ***biphotonic*** , of ***cyanine*** dyes, photoisomerization and)
IT 19764-96-6 51010-97-0 53655-17-7 54849-69-3 54957-10-7
RL: PRP (Properties)
(UV, fluorescence, and photoisomerization of, laser properties in relation to mechanism of)

L5 ANSWER 87 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1978:49874 CAPLUS
DN 88:49874
ED Entered STN: 12 May 1984
TI The influence of internal rotation and hydrogen bonds onto the excited state lifetime of indigo, ***merocyanine*** and triphenylmethane dyes. I. Lifetime measurements in the picosecond regime by means of a modelocked dye laser
AU Wirth, P.; Schneider, S.; Doerr, F.
CS Inst. Phys. Theor. Chem., Tech. Univ. Muenchen, Munich, Fed. Rep. Ger.
SO Berichte der Bunsen-Gesellschaft (1977), 81(11), 1127-32
CODEN: BBPCAX; ISSN: 0005-9021
DT Journal
LA English
CC 22-2 (Physical Organic Chemistry)
Section cross-reference(s): 40
AB Lack of fluorescence of the title dyes in solvents of low viscosity at room temp. is caused by fast nonradiative relaxation processes which place the S1 state lifetime in the picosecond region. Lifetime measurements were made in various solvents with different viscosities by applying a mode locked dye laser together with the techniques of ground state repopulation and ***two*** - ***photon*** fluorescence.
ST rotation excited state lifetime; fluorescence dye relaxation; indigo dye fluorescence relaxation; ***merocyanine*** dye fluorescence relaxation; triphenylmethane dye fluorescence relaxation; hydrogen bond excited state lifetime
IT Dyes
Dyes, ***cyanine***
(excited state lifetimes of)
IT Hydrogen bond
(in dyes, excited state lifetimes in relation to)
IT Molecular rotation
(of dyes, excited state lifetimes in relation to)
IT Fluorescence
(of dyes, mol. rotation and hydrogen bonding in relation to)
IT Energy level
(excited, lifetime of, in dyes, mol. rotation and hydrogen bonding in relation to)
IT 548-62-9 569-64-2 40252-61-7 40252-62-8 61391-18-2 62635-37-4 62635-38-5
RL: PRP (Properties)
(excited state lifetime of)

L5 ANSWER 88 OF 92 INSPEC (C) 2006 IEE on STN
AN 1977:1089624 INSPEC DN A77068087
TI Single- and ***two*** - ***photon*** spectroscopy of liquid media using the pulsed acousto-optical effect.
AU Bonch-Bruevich, A.M.; Razumova, T.K.; Starobogatov, I.O.
SO Optics and Spectroscopy vol.42, no.1, p.45-8. 18 refs.
CODEN: OPSUA3 ISSN: 0030-400X
Translation of: Optika i Spektroskopiya (Jan. 1977) vol.42, no.1, p.82-7. 18 refs.
CODEN: OSFMA3 ISSN: 0030-4034
DT Journal; Translation Abstracted
TC Experimental
CY USSR; United States
LA English
AB Experimental details including a schematic diagram of the arrangement are given for studying the single and ***two*** - ***photon*** absorption (TPA) and determining the TPA cross section in organic dye solutions. Absorption spectral curves are shown for ***polymethine*** in ethanol and for anthracene in ethanol. New 2-photon bands were found for anthracene.
CC A3320K Visible spectra; A3380K Multiphoton processes; A3380 Photon

interactions with molecules; A7840D Liquids
CT ORGANIC COMPOUNDS; PHOTOACOUSTIC EFFECT; SPECTRA OF ORGANIC MOLECULES AND SUBSTANCES; ***TWO*** - ***PHOTON*** SPECTRA
ST liquid media; organic dye solutions; ***two photon absorption cross*** *** section*** ; single photon absorption; pulsed acousto optical effect

L5 ANSWER 89 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1976:128154 CAPLUS
DN 84:128154
ED Entered STN: 12 May 1984
TI ***Two*** - ***photon*** absorption in organic dyes-relation with the symmetry of the levels
AU Foucault, B.; Hermann, J. P.
CS Lab. Opt. Quant., Ec. Polytech., Palaiseau, Fr.
SO Optics Communications (1975), 15(3), 412-15
CODEN: OPCOB8; ISSN: 0030-4018
DT Journal
LA English
CC 73-2 (Spectra by Absorption, Emission, Reflection, or Magnetic Resonance, and Other Optical Properties)
AB ***Two*** - ***photon*** absorption was studied in a no. of xanthenes, ***cyanines*** , and acridines; the 2-photon cross section does not follow the F. P. Shaefer and W. Schmidt rule (1966). The ratio .delta..omega./.sigma.2.omega. is a function of the difference between the peak absorption frequency and twice the laser frequency, .omega.max-2.omega.L. The importance of the symmetry of the energy levels was investigated in these dye families. In the acridines, the transitions are strongly allowed for both 1- and 2-photon transitions.
ST ***two*** ***photon*** absorption dye; xanthene photon absorption; ***cyanine*** photon absorption; acridine photon absorption
IT Photon
(absorption of 2-, by dyes)
IT Dyes
Dyes, ***cyanine***
(***two*** - ***photon*** absorption by)
IT 65-61-2 81-88-9 135-49-9 197-61-5 477-73-6 518-47-8 548-24-3 989-38-8 2465-29-4 17372-87-1 18472-87-2
RL: PRP (Properties)
(***two*** - ***photon*** absorption by)

L5 ANSWER 90 OF 92 INSPEC (C) 2006 IEE on STN
AN 1974:587897 INSPEC DN A74004274
TI On the long-lived transient absorption observed in nanosecond laser photolysis studies of two ***polymethine*** ***cyanine*** dyes.
AU Razi Naqvi, K.; Sharma, D.K.; Hoytink, G.J. (Univ. Sheffield, UK)
SO Chemical Physics Letters (1 Oct. 1973) vol.22, no.2, p.226-9. 6 refs.
CODEN: CHPLBC ISSN: 0009-2614
DT Journal
TC Experimental
CY Netherlands
LA English
AB It is shown that the long-lived transient absorption which is observed when solutions of cryptocyanine and DDI (1,1'-diethyl-2, 2'-decarbocyanine iodide) in methanol and other alcohols are exposed to nanosecond ruby laser pulses arises from a photoproduction whose formation requires consecutive absorption of ***two*** ***photons*** .
CC A8250 Photochemistry and radiation chemistry
CT LIGHT ABSORPTION; ORGANIC COMPOUNDS; PHOTOLYSIS; SPECTRA OF ORGANIC MOLECULES AND SUBSTANCES
ST nanosecond laser photolysis; ***polymethine cyanine dyes*** ; cryptocyanine; photoproduct; ***consecutive absorption of two photons*** ; longlived transient absorption; DDI in methanol

L5 ANSWER 91 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1969:16001 CAPLUS
DN 70:16001
ED Entered STN: 12 May 1984
TI ***Multiphoton*** mechanism of spectral sensitization
AU Akimov, I. A.; Shablya, A. V.
CS USSR
SO Zhurnal Nauchnoi i Prikladnoi Fotografii i Kinematografii (1968), 13(5), 364-5

CODEN: ZNPFAG; ISSN: 0044-4561
DT Journal
LA Russian
CC 74 (Radiation Chemistry, Photochemistry, and Photographic Processes)
AB Some characteristics of sensitized photocond. and sensitized luminescence measured on the same samples of AgI powders with adsorbed dyes were studied. The glow spectrum of the absorption region of AgI had 2 bands, at 424 and 450 m.mu.; in the absorption region of the dye it had only 1 band with a max. at 450 m.mu.. The efficiency of sensitization strongly increased with addnl. adsorption of I mols. It sharply decreased with elimination of I. Adsorption of I mols. on the samples sharply reduced the sensitized luminescence which is due to the dye and colloidal Ag. The relation between luminescence of AgI and the intensity of illumination was linear; the relation to the sensitized dye was of the 2nd power. This showed the low efficiency of energy accumulation of the donors in the system. The relative quantum yield of the sensitization of the photoeffect (.phi.ph) and luminescence (.phi.1) at the max. of sensitization (600 m.mu.) and absorption (313 m.mu.) was for AgI with a carbocyanine dye .phi.ph = 0.6-0.8 at 290.degree. and 0.15-0.2 at 90.degree., and .phi.1 = 0.001 at 77.degree.K. The absence of correlation between the sensitized photoeffect and sensitized luminescence results from the 1st taking placed by a 1-phonon mechanism, the 2nd by a 2-phonon mechanism.
ST photons spectral sensitization; spectral sensitization photons; sensitization spectral photons; dyes sensitization; ***cyanines*** sensitization
IT Luminescence
Photoconductivity
(of silver iodide, dye sensitizers for)
IT Light, chemical and physical effects
(sensitizers, for photocond. of silver iodide)
IT 7783-96-2
RL: PRP (Properties)
(luminescence of, sensitizers for)
IT 61-73-4 905-97-5
RL: USES (Uses)
(sensitizer, for luminescence of silver iodide)

L5 ANSWER 92 OF 92 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1970:36965 CAPLUS
DN 72:36965
ED Entered STN: 12 May 1984
TI ***Two*** - ***photon*** sensitization of photophysical processes in semiconductors
AU Ovsyankin, V. V.; Feofilov, P. P.
CS USSR
SO Proc., Int. Conf. Phys. Semicond., 9th (1968), Volume 1, 237-42. Editor(s): Ryvkin, S. M. Publisher: Publ. House "Nauka", Leningrad Branch, Leningrad, USSR.
CODEN: 21LIAG
DT Conference
LA English
CC 71 (Electric Phenomena)
AB The photosensitization of semiconductor crystals by adsorption of a layer of org. dye was studied. Polycryst. Ag halide AgI, AgBr, and AgCl deposited from solns., Ag halide photographic emulsions. Hg and Pb iodides, ZnO, and some others were investigated. All these semiconductor crystals, being excited at low temp. in the region of the absorption bands, show intense luminescence corresponding to the electron transition from the conduction band or from an exciton state either to the valence band or to some levels of impurity or defect origin. ***Cyanine*** dye as well as chlorophyll were used for sensitization. ***Two*** - ***photon*** luminescence was excited by irradn. with an incandescent lamp or a Xe lamp, at liq. N temp., through filters cutting the shortwavelength part of the radiation. In all cases, the excitation bands, which correspond exactly to the absorption bands of the adsorbed dyes, appear in the excitation spectra of the sensitized crystals. The luminescence spectra excited in the region of sensitization coincide with those obsd. when excited in the intrinsic absorption region of a semi conductor. The intensity of luminescence of a no. of pure semiconductor salts could b e given as I .apprx. E.gamma., where E is the excitation radiation d. In the region of the short-wavelength band of luminescence,

1.0 .ltoreq. .gamma. .ltoreq. 1.5. The deep cooling of the crystal to liq. He temp. increases the intensity of the luminescence excited in the region of sensitization by 2-3 orders o f magnitude. The possibility of a 1-photon process for the short-wavelength luminescence excited in the sensitized semiconductors by the long-wavelength radiation was ruled out in the light of the results of low-temp. expts. For 2-photon excitation, 2 mechanisms were suggested: (1) successive absorption of 2 quanta by the same element of a system passing through a long-lifetime intermediate state, and (2) cumulation of the energy of 2 primary excited interacting elements of a system onto one of the elements. Of these 2 the 1st one was rejected. The nonlinear dependence of the luminescence intensity on the exciting radiation d., which was not necessarily quadratic, favors strongly the cumulative mechanism. The sensitization of luminescence and other photoprocesses in semiconductors could be described as a process connected with a cumulation of energy of 2 or more excited elements of a system on one of the elements. The necessary condition for the feasibility of such a fundamental quantum-mech. process, A* + A* + A + A**, consists in the existence of a sufficiently strong interaction between excited states A* and approx. degeneracy, E(2A*) .apprxeq. E(A**). Different mechanisms of energy cumulation in sensitized semiconductors are discussed.

ST photosensitization semiconductors; semiconductors photosensitization; dyes adsorption semiconductors; silver halides semiconductors

IT Dyes, ***cyanine***
(adsorption of, by metal halide semiconducting crystals, luminescence sensitization by)

IT Chlorophylls, properties
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(adsorption of, by metal halide semiconductor crystals, luminescence sensitization by)

IT Semiconductors, electric
(luminescence of binary halide, ***two*** - ***photon*** sensitization of, by adsorption of ***cyanine*** dyes)

IT Photographic emulsions
(luminescence of semiconducting, ***two*** - ***photon*** sensitization of, by adsorption of ***cyanine*** dyes)

IT Adsorption
(of ***cyanine*** dyes by metal halide semiconductor crystals, luminescence sensitization by)

IT Luminescence
(of metal halide semiconductor crystals, ***two*** - ***photon*** sensitization of, by adsorption of ***cyanine*** dyes)

IT Lead iodide
RL: USES (Uses)
(luminescence of semiconducting, ***two*** - ***photon*** sensitization of, by adsorption of ***cyanine*** dyes)

IT 37320-91-5, Mercury iodide
RL: USES (Uses)
(luminescence of semiconducting, ***two*** - ***photon*** sensitization of, by adsorption of ***cyanine*** dyes)

IT 1314-13-2, properties 7783-90-6 7783-96-2 7785-23-1
RL: PRP (Properties)
(luminescence of semiconducting, ***two*** - ***photon*** sensitization of, by adsorption of ***cyanine*** dyes)

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(FILE 'HOME' ENTERED AT 17:45:05 ON 17 FEB 2006)

FILE 'CAPLUS, INSPEC' ENTERED AT 17:45:13 ON 17 FEB 2006
L1 13460 S (METHINE OR POLYMETHINE OR OXANOL OR MEROCYANINE)
L2 25982 S (METHINE OR POLYMETHINE OR OXANOL OR MEROCYANINE OR CYANINE)
L3 72028 S ((TWO OR MULTI OR BI)(5A)PHOTON?) OR BIPHOTON? OR MULTIPHOTON
L4 104 S L2 AND L3
L5 92 DUP REM L4 (12 DUPLICATES REMOVED)

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